

# TC-WA7ES/WR565/WR665S

## SERVICE MANUAL

*US Model*

TC-WA7ES/WR565/WR665S

*Canadian Model*

*AEP Model*

*UK Model*

*E Model*

*Australian Model*

*Chinese Model*

TC-WR565/WR665S

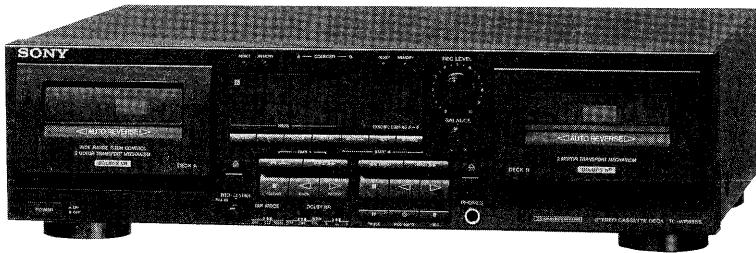


Photo : TC-WR665S

\* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism		TC-WR545/WR741
Tape Transport Mechanism Type	DECK A	TC-WR565/WR665S : TCM-190RA14CL TC-WA7ES : TCM-190RA12CL
	DECK B	TCM-190RB12CL

### SPECIFICATIONS

#### System

Recording system

4-track 2-channel stereo

Fast-winding time (approx.)

90 sec. (with Sony C-60 cassette)

Bias AC bias

Signal-to-noise ratio (at peak level and weighted with Dolby NR off)

Type I tape, Sony Type I (NORMAL) : 55 dB

Type II tape, Sony Type II (HIGH) : 57 dB

Type IV tape, Sony Type IV (METAL) : 58 dB

S/N ratio improvement (approximate values)

With Dolby B NR on : 5dB at 1kHz, 10dB at 5kHz

With Dolby C NR on : 15dB at 500Hz, 20dB at 1kHz

With Dolby S NR on (TC-WA7ES/WR665S only) :

10dB at 100Hz, 24dB at 1kHz

Harmonic distortion

0.4% (with Type I tape, Sony Type I (NORMAL) :

160 nWb/m 315 Hz, 3rd H.D.)

1.8% (with Type IV tape, Sony Type IV (METAL) :

250 nWb/m 315 Hz, 3rd H.D.)

Frequency response (Dolby NR off)

Type I tape, Sony Type I (NORMAL) :

30-15,000Hz ( ± 3dB, IEC)

Type II tape, Sony Type II (HIGH) :

30-17,000Hz ( ± 3dB, IEC)

Type IV tape, Sony Type IV (METAL) :

30-18,000Hz ( ± 3dB, IEC)

30-13,000Hz ( ± 3dB, -4dB recording)

Wow and flutter

TC-WA7ES/WR665S : ± 0.13% W. Peak (IEC)

0.07% W. RMS (NAB)

± 0.18% W. Peak (DIN)

TC-WR565 : ± 0.14% W. Peak (IEC)

0.08% W. RMS (NAB)

± 0.19% W. Peak (DIN)

Variable pitch range (approx.)

- 30 to +30%

#### Inputs

Line inputs (phono jacks)

Sensitivity : 0.16V

Input impedance : 47 kilohms

#### Outputs

Line outputs (phono jacks)

Rated output level : 0.5V at a load impedance of 47 kilohms

Load impedance : Over 10 kilohms

Headphones (stereo phone jack)

Output level : 1mW at a load impedance of 32 ohms

— Continued on page 2 —

**STEREO CASSETTE DECK**  
**SONY®**

**General****Power requirements**

Where purchased	Power requirements
US, Canadian model	120V AC, 60Hz
AEP, UK, German, Chinese model	220 – 230V AC, 50/60Hz
Australian model	240V AC, 50/60Hz
E model	120/220/240V AC, 50/60Hz

**Power consumption**

26W

**Dimensions (approx) (w/h/d)**

Model for U.K. and Australian :

430×123×300mm (w/h/d)

(17 × 4 7/8 × 11 1/8 inches)

Model for other countries :

430×123×290mm (w/h/d)

(17 × 4 7/8 × 11 1/2 inches)

including projecting parts and controls

**Mass (Approx.)**

4.5kg (9lbs 15oz)

**Supplied accessories**

Audio connecting cords (2 phono plug-2 phone plugs) (2)

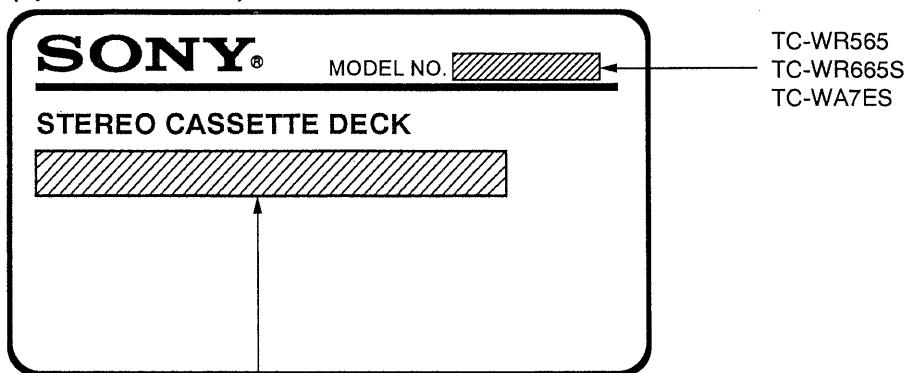
**Optional accessory**

Remote commander RM-J902

Design and specifications are subject to change without notice.

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**MODEL IDENTIFICATION  
(Specification Label)**

US, Canadian model : AC 120V 60Hz  
 UK model : AC 240V 50Hz  
 Australian model : AC 240V~50/60Hz  
 AEP, German model : AC 220-230V~50/60Hz  
 E model : AC120, 220, 240V~50/60Hz  
 Chinese model : AC 220 – 230V~50/60Hz

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

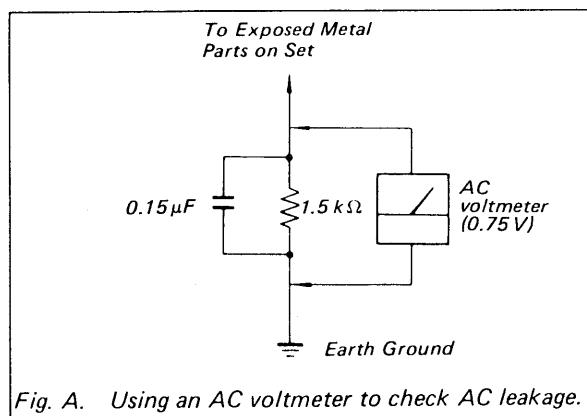


Fig. A. Using an AC voltmeter to check AC leakage.

### SAFETY-RELATED COMPONENT WARNING!!

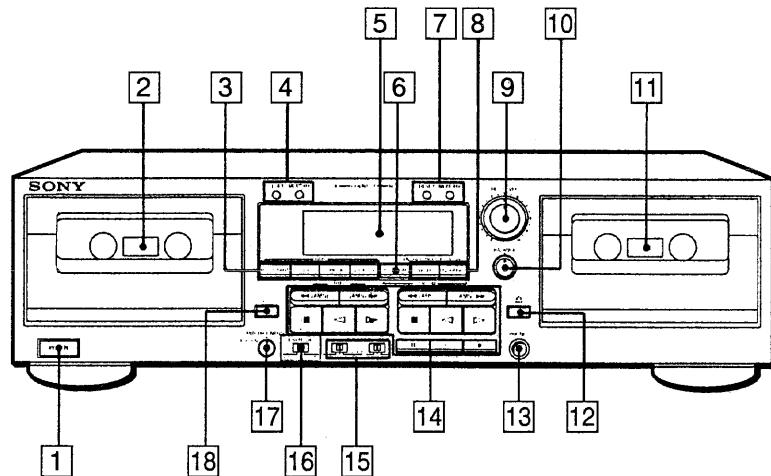
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SECTION 1 GENERAL

### 1-1. IDENTIFYING THE PARTS



#### FRONT PANEL

[1] POWER switch	[11] Deck B
[2] Deck A	[12] □ (eject) button (deck B)
[3] RMS" operation buttons	[13] PHONES jack (stereo phone jack)
RMS/START buttons	[14] Tape operation buttons
SET buttons	◀◀(leftward fastwinding)/AMS**/ RMS" - button
CHECK buttons	▶▶(rightward fastwinding)/AMS**/ RMS" +button
DISPLAY buttons	■(stop)/(RMS") CLEAR button
[4] COUNTER buttons (deck A)	◀◀(reverse play)/(RMS") BACK button
RESET button	▶▶(forward play)/(RMS") FRONT button
MEMORY button (TC-WA7ES/WR665S only)	■ PAUSE button
[5] Display panel	○ REC MUTE (record muting) button
[6] AUTO CAL button	● REC (record muting) button
[7] COUNTER buttons (deck B)	[15] DOLBY NR switches
RESET button	OFF/ON/FILTER ON switch
MEMORY button (TC-WA7ES/WR665S only)	B/C/S switch
[8] SYNCHRO DUBBING buttons	[16] DIR (direction) MODE switch
HIGH button	[17] PITCH control
NORMAL button	[18] □ (eject) button (deck A)
[9] REC (recording) LEVEL control	
[10] BALANCE control	

\*\* Random Music Sensor

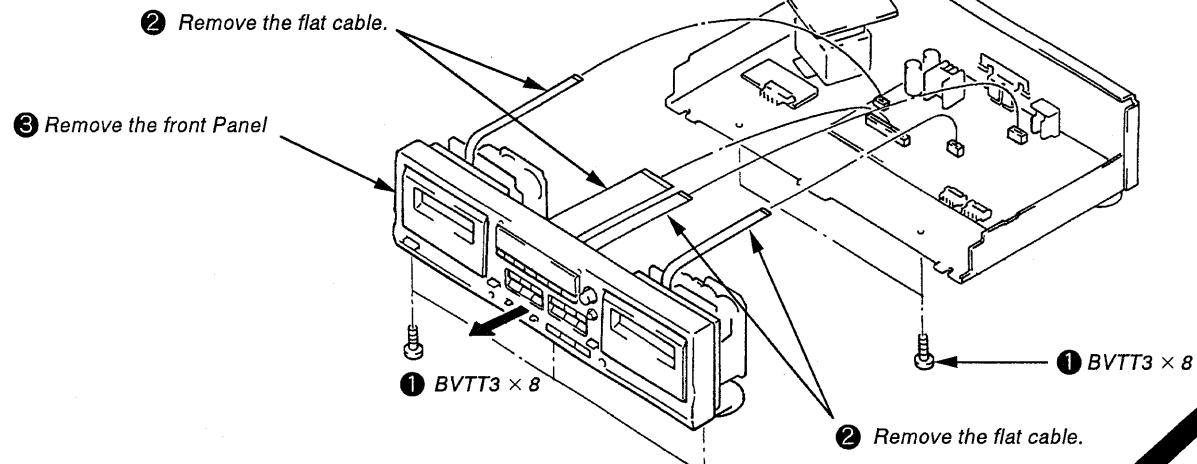
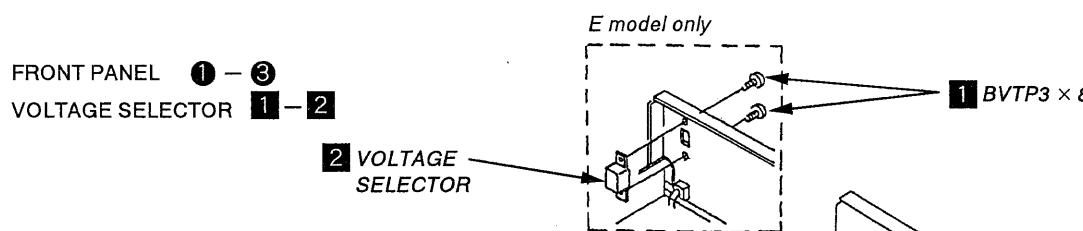
\*\*\* Automatic Music Sensor

## SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

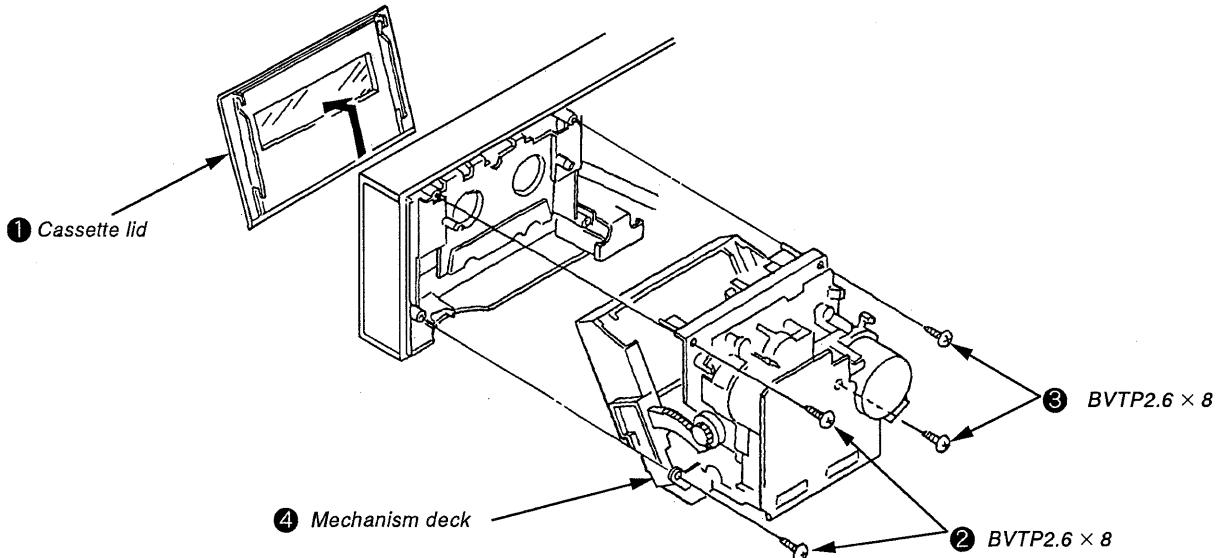
**CASE**  
Unscrew the four case attachment screws M3 × 8 and remove the case.

### 2-1. FRONT PANEL

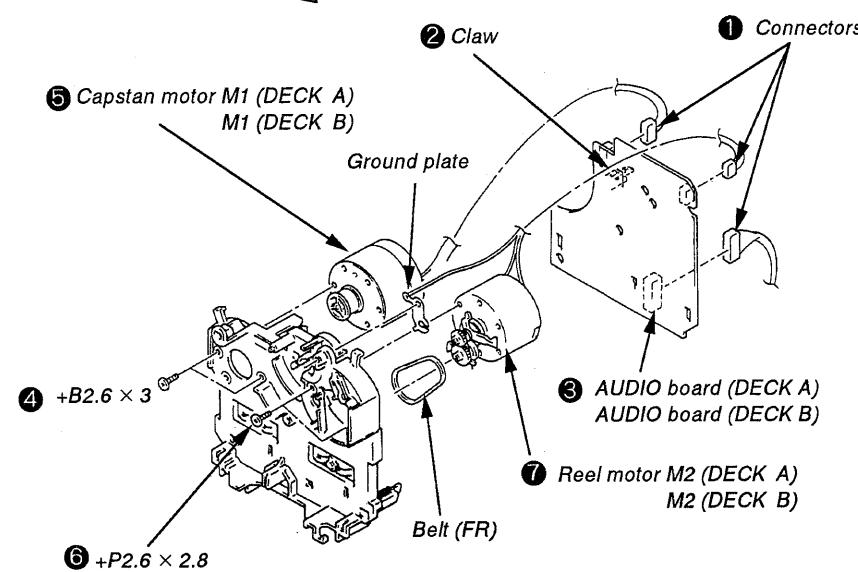
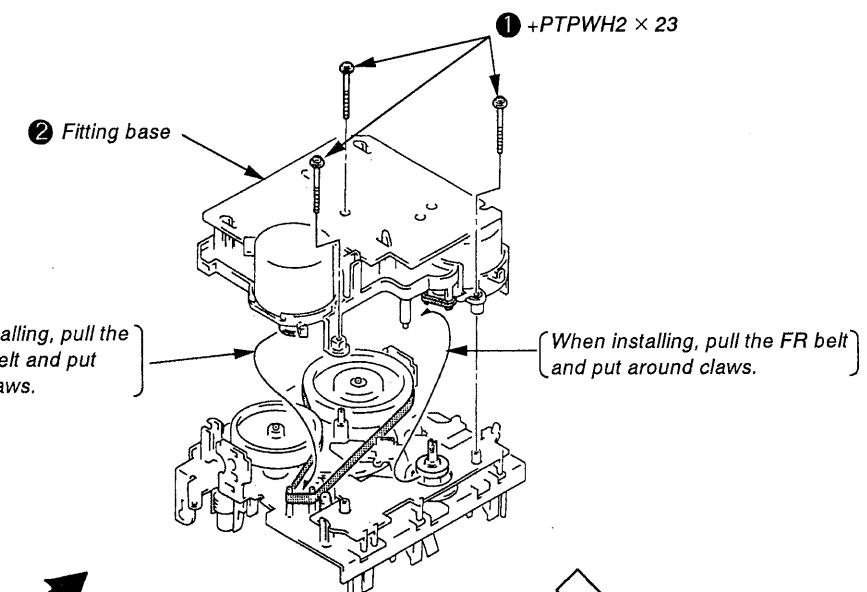


### 2-2. MECHANISM DECK

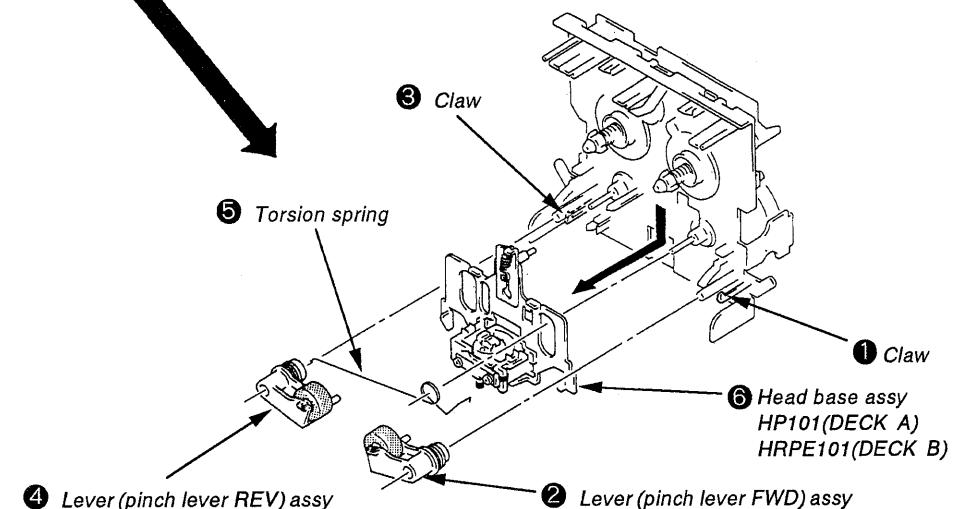
① Press the EJECT button.



### 2-3. CAPSTAN MOTOR, REEL MOTOR



### 2-4. HEAD, PINCH ROLLER



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS

#### PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab:
 

record/playback/erase head	pinch roller
rubber belts	capstan
idle	
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

#### Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 65g · cm (0.42 to 0.9 oz · inch)
Forward back tension	CQ-102C	DECK A : 1 to 6g · cm (0.014 to 0.083 oz · inch) DECK B : 2 to 9g · cm (0.03 to 0.12 oz · inch)
Reverse	CQ-102RC	30 to 65g · cm (0.42 to 0.9 oz · inch)
Reverse back tension	CQ-102RC	1 to 6g · cm (0.014 to 0.083 oz · inch)
FF/REW	CQ-201B	70 to 120g · cm (0.98 to 1.66 oz · inch)

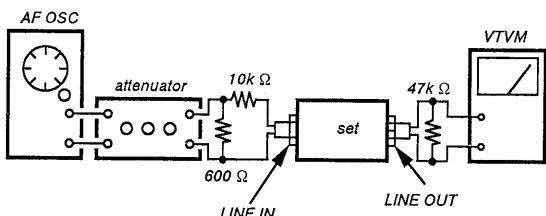
### 3-2. ELECTRICAL ADJUSTMENTS

#### PRECAUTION

- The adjustment should be performed in the publication.  
(Be sure to make playback adjustment at first.)
- The adjustments and measurement should be performed for both L-CH and R-CH.
  - Switch position
 

DOLBY NR switch	: OFF
DIR MODE switch	: $\leftrightarrow$
  - Standard record position :  
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

— Record Mode —



#### Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (-3.8dB)

#### Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (-3.8dB)

#### Test Tape

Tape	Contents	Use
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

$$0dB = 0.775V$$

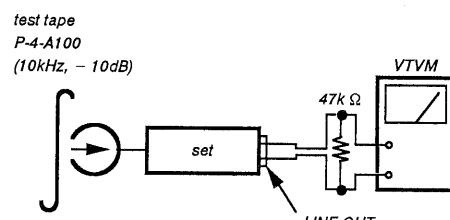
#### Test Mode

- Insert a short-circuit plug into TP801 (2P) and turn ON the power switch.  
At first, all the fluorescent tubes light up, then the system returns to normal display. (However, "0000" is not displayed on the counter.)
- To release the test mode, remove the short plug and turn off the power switch.
- Remove the short plug after completion of adjustment.

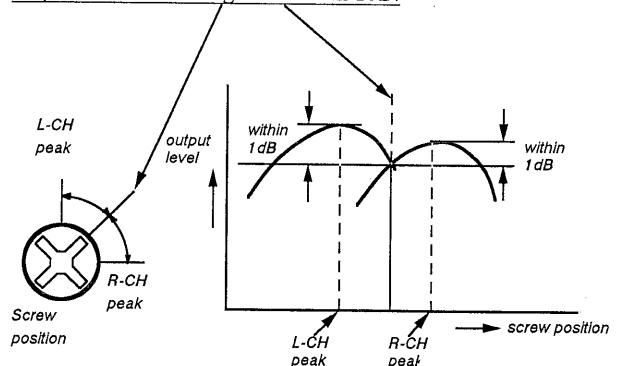
#### Record/Playback Head Azimuth Adjustment

##### Procedure :

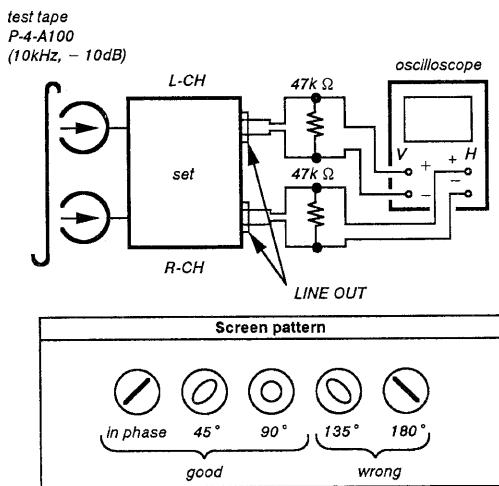
- Forward playback Mode



- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



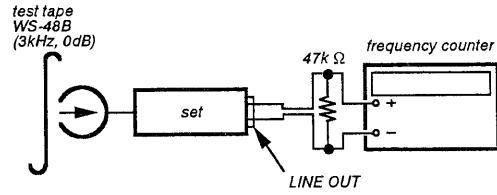
### 3. Playback Mode



### Tape Speed Adjustment

#### Procedure :

- Forward Playback Mode –



(High speed adjustment)

1. Set to test mode. (Refer to page 7)
2. Set to FWD playback mode.
3. Keep on pressing the HIGH SPEED DUBBING switch.
4. Adjust RV72 so that the frequency counter reading becomes  $6,000 \pm 20\text{Hz}$ .
5. Release test mode after adjustment is completed.

(Normal speed adjustment)

1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes  $3,000 \pm 10\text{Hz}$ .
- (Pitch control adjustment) (TC-WR565, TC-WR665S)
  1. Turn ON the PITCH CONTROL switch.
  2. Set RV801 to mechanical center.
  3. Set to FWD playback mode.
  4. Adjust RV802 so that the frequency counter reading becomes  $3,000 \pm 10\text{Hz}$ .

Frequency difference between the beginning and the end of the tape should be within 3%.

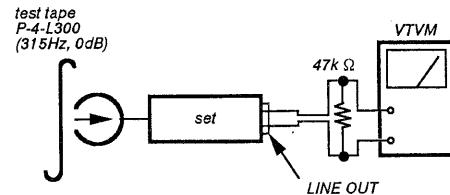
Frequency difference between the deck A and deck B the beginning of the tape should be within 1.5%.

**Adjustment Location :** AUDIO board, CONNECTOR board.  
(See page 10)

### Playback Level Adjustment

#### Procedure :

- Forward Playback Mode –



Adjust RV11(L-CH) and RV21(R-CH) so the VTVM reading becomes the adjustment limits below.

#### Adjustment Value :

LINE OUT level :  $-7.7 \pm 0.5\text{dB}$  (0.301 to 0.338V)

Level difference between channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

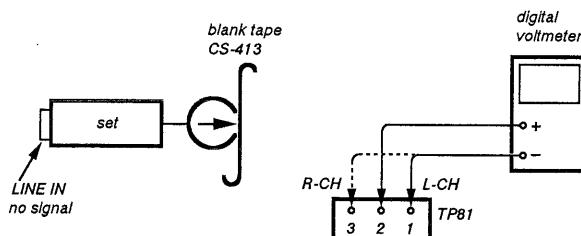
**Adjustment Location :** AUDIO board. (See page 10)

### Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81, T91).

#### Procedure :

( ) : R-CH



1. Connect the digital voltmeter to test point TP81.
2. Set RV81 (RV91) to mechanical center.
3. Set to FWD record mode.
4. Adjust T81 (T91) so that the digital voltmeter reading becomes minimum.

**Adjustment Value :** Maximum 220mV

**Adjustment Location :** AUDIO board. (See page 10)

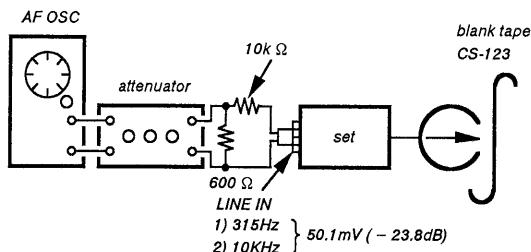
### Record Bias Adjustment

#### Setting :

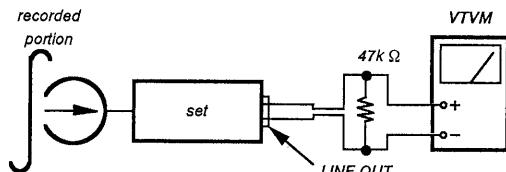
REC LEVEL control : standard record position (Refer to page 7.)

#### Procedure :

1. Record Mode



2. Playback Mode



Confirm that the 10kHz playback output is  $0 \pm 0.5\text{dB}$  relative to the 315Hz output. If necessary, adjust RV81 (L-CH), RV91(R-CH) and repeat the steps given above.

**Adjustment Location :** AUDIO board. (See page 10)

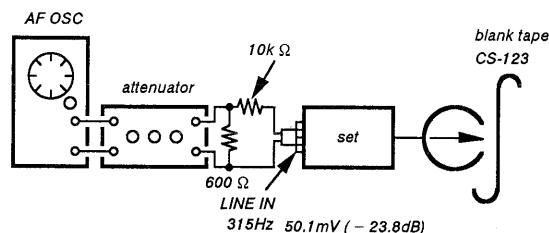
### Record Level Adjustment

#### Setting :

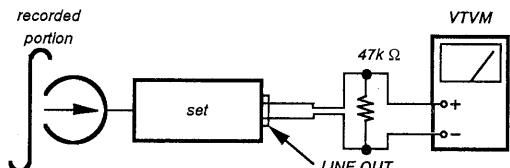
REC LEVEL control : standard record position (Refer to page 7.)

#### Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV101(L-CH), RV201(R-CH) and repeat the steps 1 and 2.

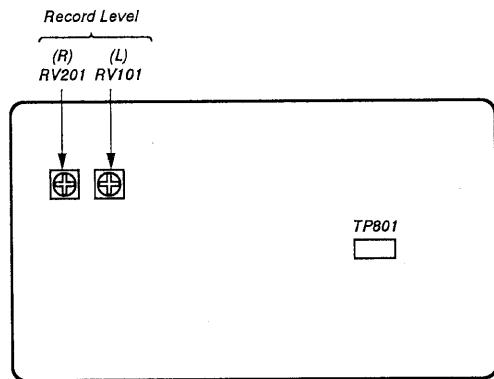
#### Adjustment Value :

LINE OUT level :  $-23.8 \pm 0.5\text{dB}$  (47.2 to 53mV)

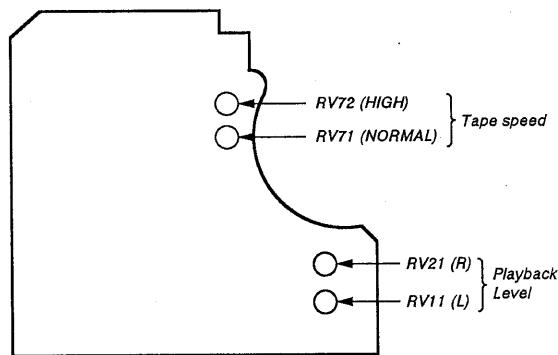
**Adjustment Location :** SYSTEM CONTROL board.  
(See page 10)

— Adjustment Parts Location Diagrams —

**[SYSTEM CONTROL BOARD]**

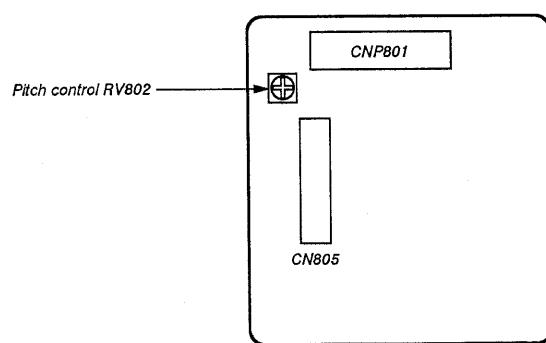
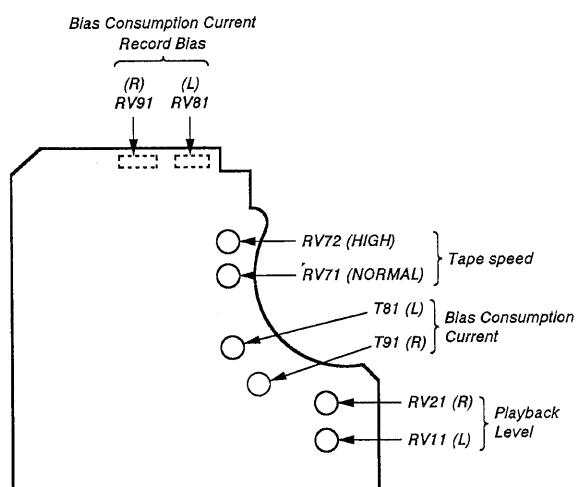


**DECK-A :  
[AUDIO BOARD]**



**DECK-B :  
[AUDIO BOARD]**

**DECK-B :  
[CONNECTOR BOARD]**



## SECTION 4

### EXPLANATION OF IC TERMINALS

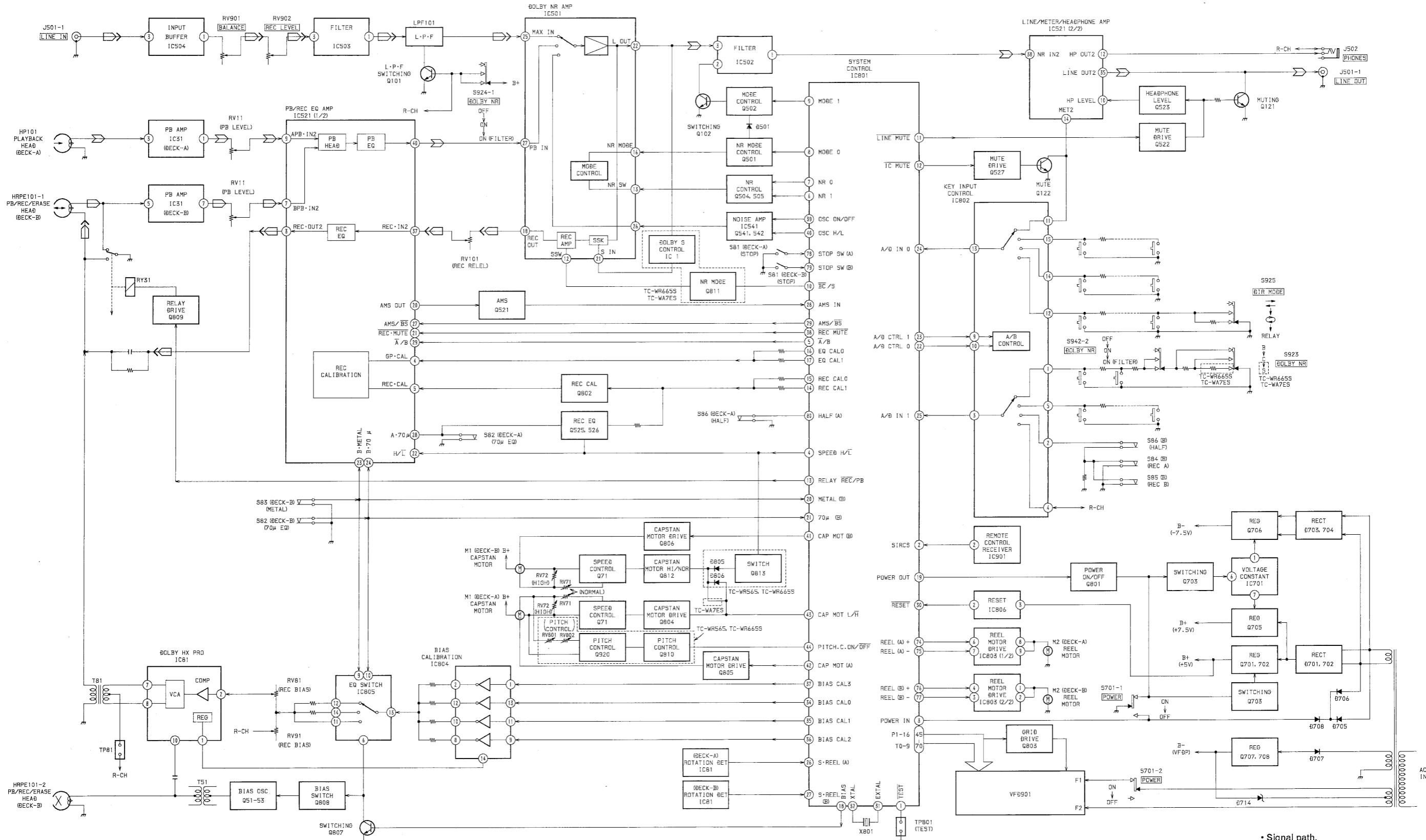
IC801 CXP82316-053Q

Pin No.	Pin name	I/O	Description
1	TEST	I	Test mode terminal. "L" : Test mode, "H" : Normal mode
2	SIRCS	I	Sircs signal in terminal.
3	POWER IN	I	Power OFF. OFF = 0V
4	SPEED H/L	O	Normal/High selector for equalizer.
5	A/B	O	Playback A/B selector. "L" : DECK-A, "H" : DECK-B
6	NR1	O	Dolby NR control.
7	NR0	O	Dolby NR control.
8	MODE0	O	Dolby NR mode control.
9	MODE1	O	Dolby NR mode control.
10	BC/S	O	Dolby NR type selector. "L" : Dolby B, C, "H" : Dolby S
11	LIN MUTE	O	Line mute ON/OFF. "L" : ON
12	IC MUTE	O	Meter mute. "H" : ON
13	REALY REC/PB	O	Recording/Playback selector at DECK-B. "L" : Recording
14	REC CAL0	O	Recording calibration. "H" : ON
15	REC CAL1	O	Recording calibration. "H" : ON
16	EQ CAL0	O	EQ calibration terminal.
17	EQ CAL1	O	EQ calibration terminal.
18	BIAS	O	Bias ON/OFF at DECK-B. "H" : ON
19	POWER OUT	O	Power ON/OFF.
20	METAL (B)	I	Metal tape selector terminal. "H" : Metal
21	70 $\mu$ (B)	I	CrO <sub>2</sub> tape selector terminal. "L" : CrO <sub>2</sub>
22	A/D CTRL0	O	A/D converter analog switch control.
23	A/D CTRL1	O	A/D converter analog switch control.
24	A/D IN0	I	A/D converter analog input.
25	A/D IN1	I	A/D converter analog input.
26	S. REEL (A)	I	S-Side reel rotation detection at DECK-A.
27	S. REEL (B)	I	S-Side reel rotation detection at DECK-B.
28	AMS IN	I	AMS signal input terminal.
29	AMS/BS	O	AMS/BS selector. "L" : BS ON
30	RESET	I	Reset terminal. Reset : 0V
31	EXTAL	O	System clock output terminal.
32	XTAL	I	System clock input terminal.
33	V <sub>ss</sub>	-	Power supply (GND)
34	BIAS CAL0	O	EQ Bias calibration terminal.
35	BIAS CAL1	O	EQ Bias calibration terminal.
36	BIAS CAL2	O	EQ Bias calibration terminal.
37	BIAS CAL3	O	EQ Bias calibration terminal.
38	REC MUTE	O	Recording mute ON/OFF. "L" : ON
39	OSC ON/OFF	O	OSC ON/OFF control. "H" : OFF
40	OSC H/L	O	OSC H/L control terminal.

Pin No.	Pin name	I/O	Description
41	CAP. MOTOR (B)	O	Capstan motor output at DECK-B.
42	CAP. MOTOR (A)	O	Capstan motor output at DECK-A.
43	CAP. MOT (L/H)	O	Capstan motor speed selector . "L" : Normal
44	PITCH. C. ON/OFF	O	Pitch control ON/OFF.
45	P16	O	VFD Segment.
46	P15	O	VFD Segment.
47	P14	O	VFD Segment.
48	P13	O	VFD Segment.
49	P12	O	VFD Segment.
50	P11	O	VFD Segment.
51	P10	O	VFD Segment.
52	P9	O	VFD Segment.
53	P8	O	VFD Segment.
54	P7	O	VFD Segment.
55	P6	O	VFD Segment.
56	P5	O	VFD Segment.
57	P4	O	VFD Segment.
58	P3	O	VFD Segment.
59	P2	O	VFD Segment.
60	P1	O	VFD Segment.
61	T0	O	VFD Grid.
62	T1	O	VFD Grid.
63	T2	O	VFD Grid.
64	T3	O	VFD Grid.
65	T4	O	VFD Grid.
66	T5	O	VFD Grid.
67	T6	O	VFD Grid.
68	T7	O	VFD Grid.
69	T8	O	VFD Grid.
70	T9	O	VFD Grid.
71	VFDP	—	VFD Power.
72	V <sub>DD</sub>	—	Power supply (+5V)
73	—	—	+5V
74	REEL (A) +	O	Reel motor (+) output at DECK-A. "H" : FF.
75	REEL (A) -	O	Reel motor ( - ) output at DECK-A. "H" : REW.
76	REEL (B) +	O	Reel motor (+) output at DECK-B. "H" : FF.
77	REEL (B) -	O	Reel motor ( - ) output at DECK-B. "H" : REW.
78	STOP SW (A)	I	Mechanism stop switch input for DECK-A.
79	STOP SW (B)	I	Mechanism stop switch input for DECK-B.
80	HALF (A)	I	Half pawl input for DECK-A. "L" : Available

## SECTION 5 DIAGRAMS

## 5-1. BLOCK DIAGRAM



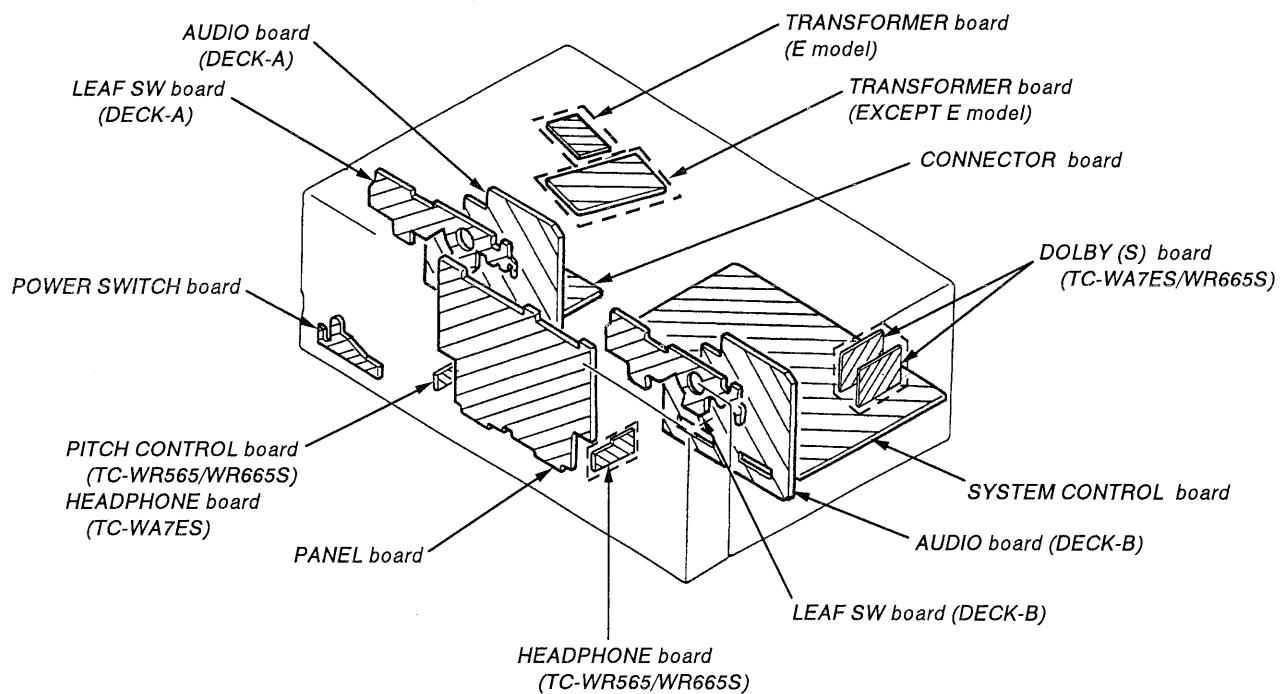
02 —————R-CH is Omitted; Same as L-CH————

- Signal path.

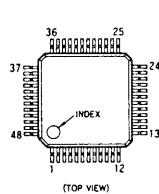
Σ : PB ( DECK A )

▶ : PB ( DECK B )

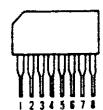
● CIRCUIT BOARDS LOCATION



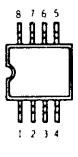
## ● SEMICONDUCTOR LEAD LAYOUTS

CXA1417Q  
CXA1599Q

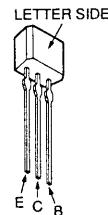
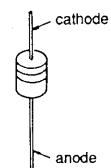
M5218AL



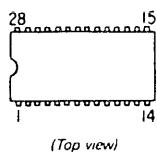
μ PC4570G2



2SA1175-HFE

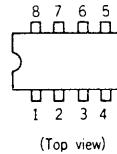
H2S6A1L  
UZL-7L2  
1SS202-1  
11ES2-NTA2B

CXA1563S

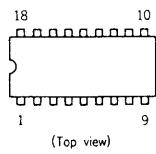
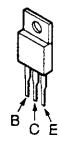


(Top view)

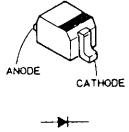
M5218AP



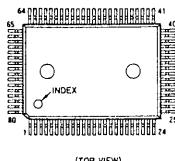
μ PC1297CA

2SB1094-LK  
2SD2012

MA110



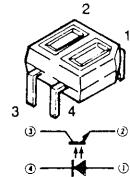
CXP82316-053Q



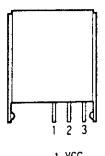
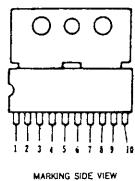
(TOP VIEW)

DTA144ES  
DTC143TS  
2SC2603-EF  
2SD2144S2SB1116A-L  
2SD1387

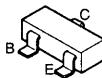
NJL5165K-B (H1)



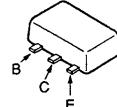
LA6510

1. VCC  
2. VOUT  
3. GND

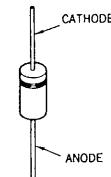
2SA1162-G



2SD1622-S



1N4148M



## 5-2. PRINTED WIRING BOARDS (SYSTEM CONTROL SECTION)

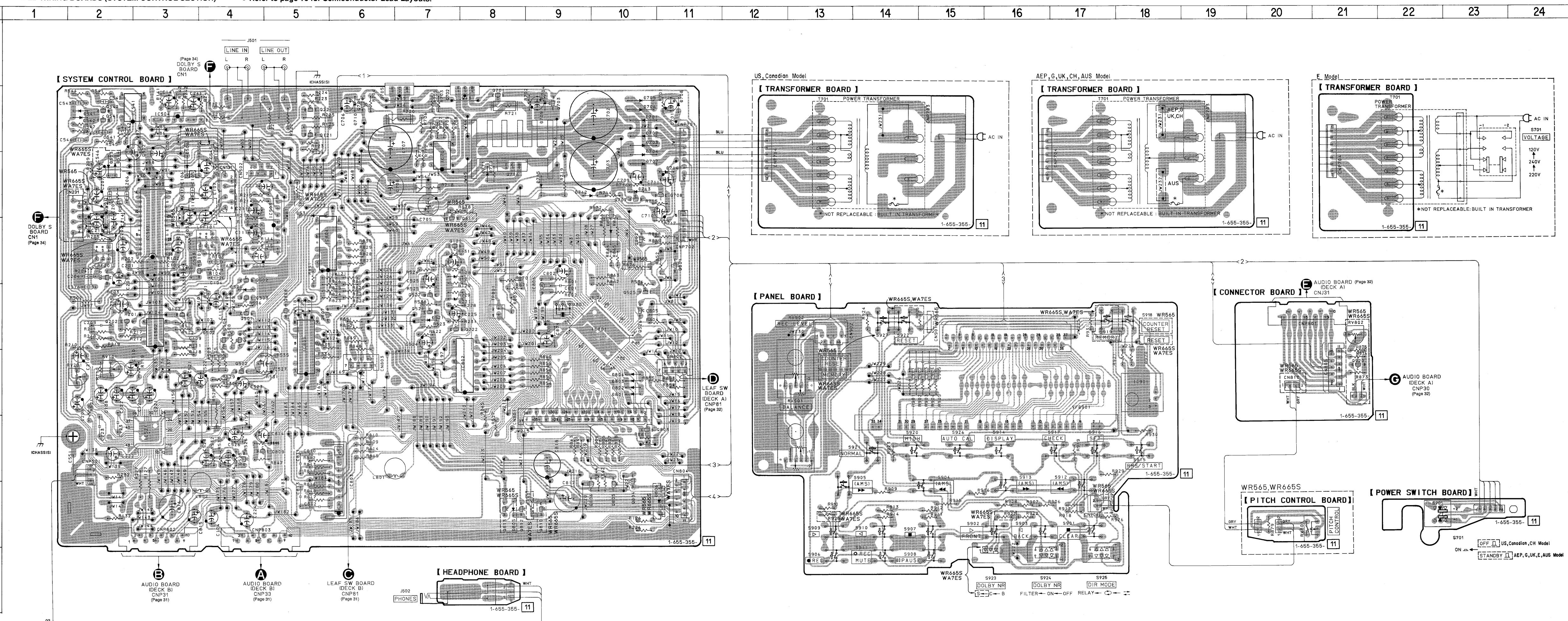
● Refer to page 16 for Semiconductor Lead Layouts.

## ● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D121	D-7	Q101	D-4
D221	E-7	Q102	E-3
D501	E-4	Q121	B-5
D502	E-4	Q122	D-7
D503	C-2	Q201	D-2
D504	C-2	Q202	E-2
D505	C-4	Q221	B-5
D506	C-3	Q222	E-7
D521	E-7	Q501	E-4
D531	C-5	Q502	D-4
D541	B-2	Q503	E-4
D542	B-2	Q504	E-4
D701	B-10	Q505	E-4
D702	B-10	Q521	E-7
D703	B-10	Q522	F-4
D704	C-10	Q523	G-4
D705	B-10	Q525	E-10
D706	B-10	Q526	E-10
D707	C-10	Q527	E-7
D708	B-11	Q541	B-2
D709	B-9	Q542	B-2
D710	B-6	Q701	B-8
D711	C-8	Q702	B-8
D712	C-9	Q703	B-9
D713	C-10	Q704	B-6
D714	C-11	Q705	B-7
D715	C-9	Q706	C-8
D801	F-10	Q707	C-10
D802	F-10	Q708	C-11
D803	F-10	Q801	D-11
D804	F-10	Q802	D-10
D805	H-8	Q803	G-10
D806	H-11	Q804	H-10
D807	D-10	Q805	H-10
IC501	D-3	Q807	E-5
IC502	E-3	Q808	E-5
IC503	D-5	Q809	G-4
IC504	B-3	Q810	H-9
IC521	G-3	Q811	D-7
IC541	B-2	Q812	H-8
IC701	C-7	Q813	H-8
IC801	E-10	Q920	F-21
IC802	F-8		
IC803	G-6		
IC804	D-5		
IC805	E-5		
IC806	E-9		
IC901	F-18		

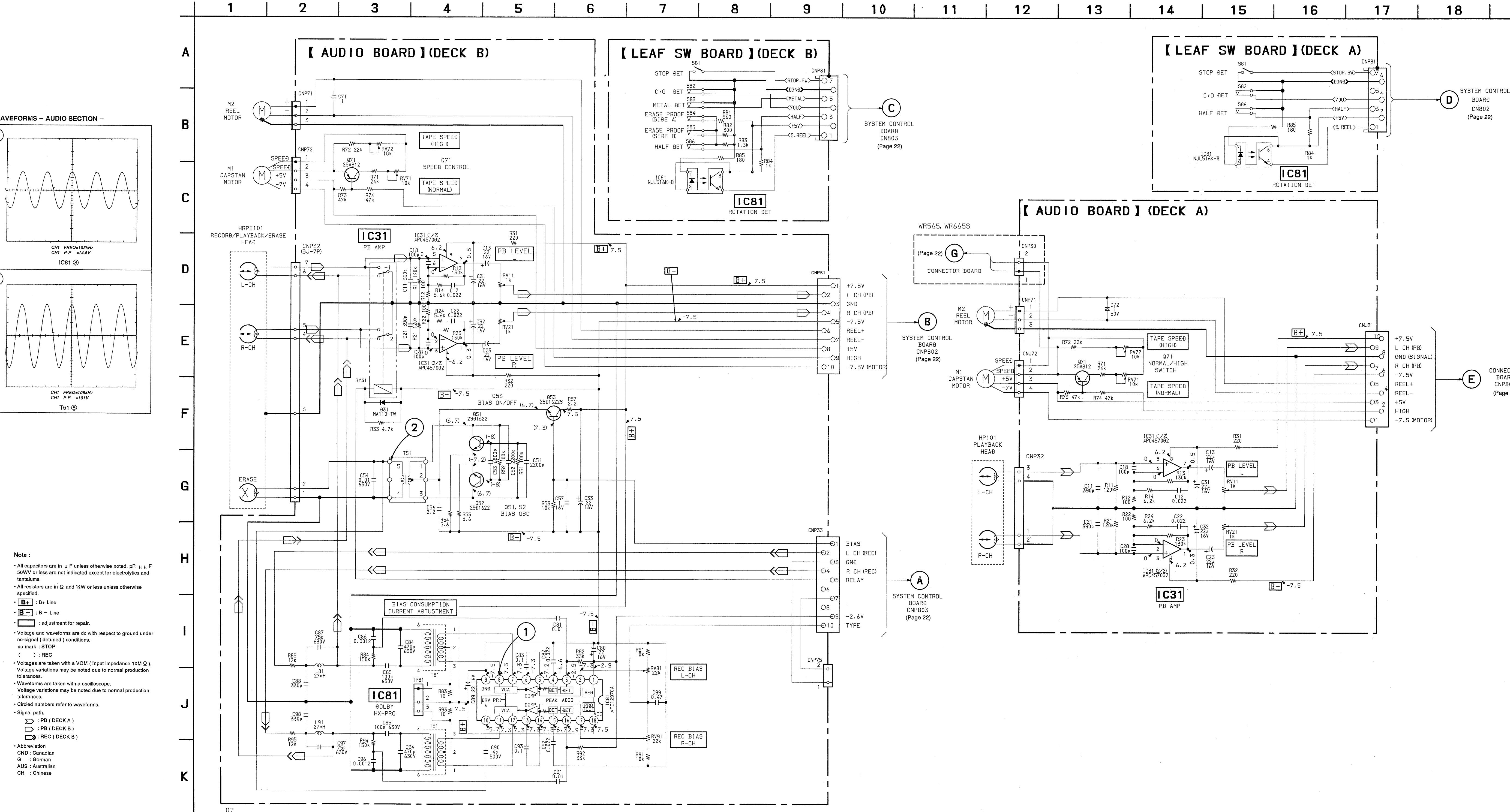
## Note:

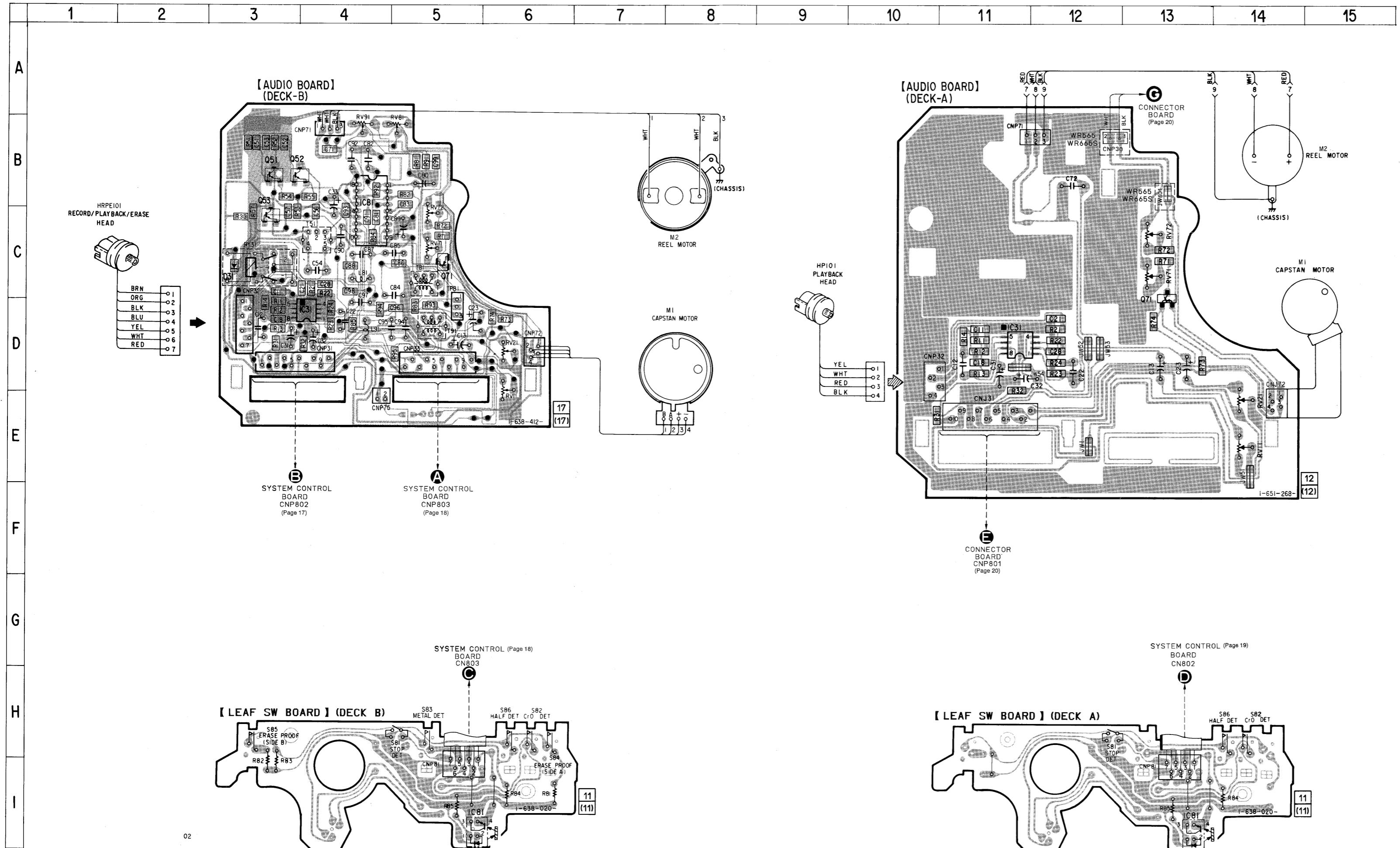
- : parts extracted from the component side.
- ..... : Pattern on the side which is seen.
- Abbreviation
  - CND : Canadian
  - G : German
  - AUS : Australian
  - CH : Chinese





#### 5-4. SCHEMATIC DIAGRAM (AUDIO)





• SEMICONDUCTOR LOCATION (DECK-A)

Ref. No.	Location
IC31	D - 11
IC81 (LEAF SW)	I - 13
Q71	C - 13

(DECK-B)

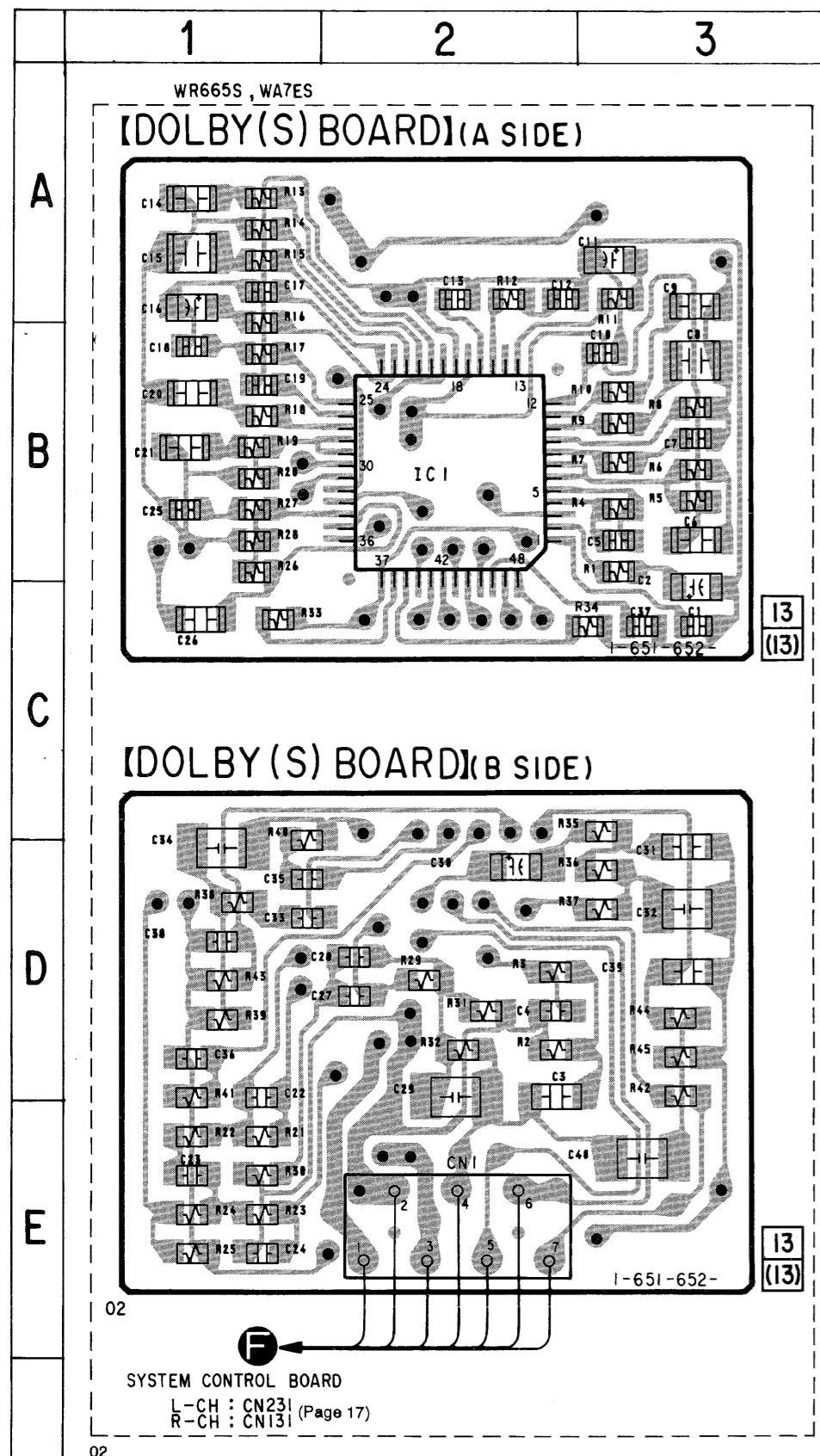
Ref. No.	Location
D31	C - 3
IC31	D - 4
IC81 (AUDIO)	I - 5
Q71	C - 5
Q51	B - 3
Q52	B - 3
Q53	C - 3
Q71	C - 5

Note:

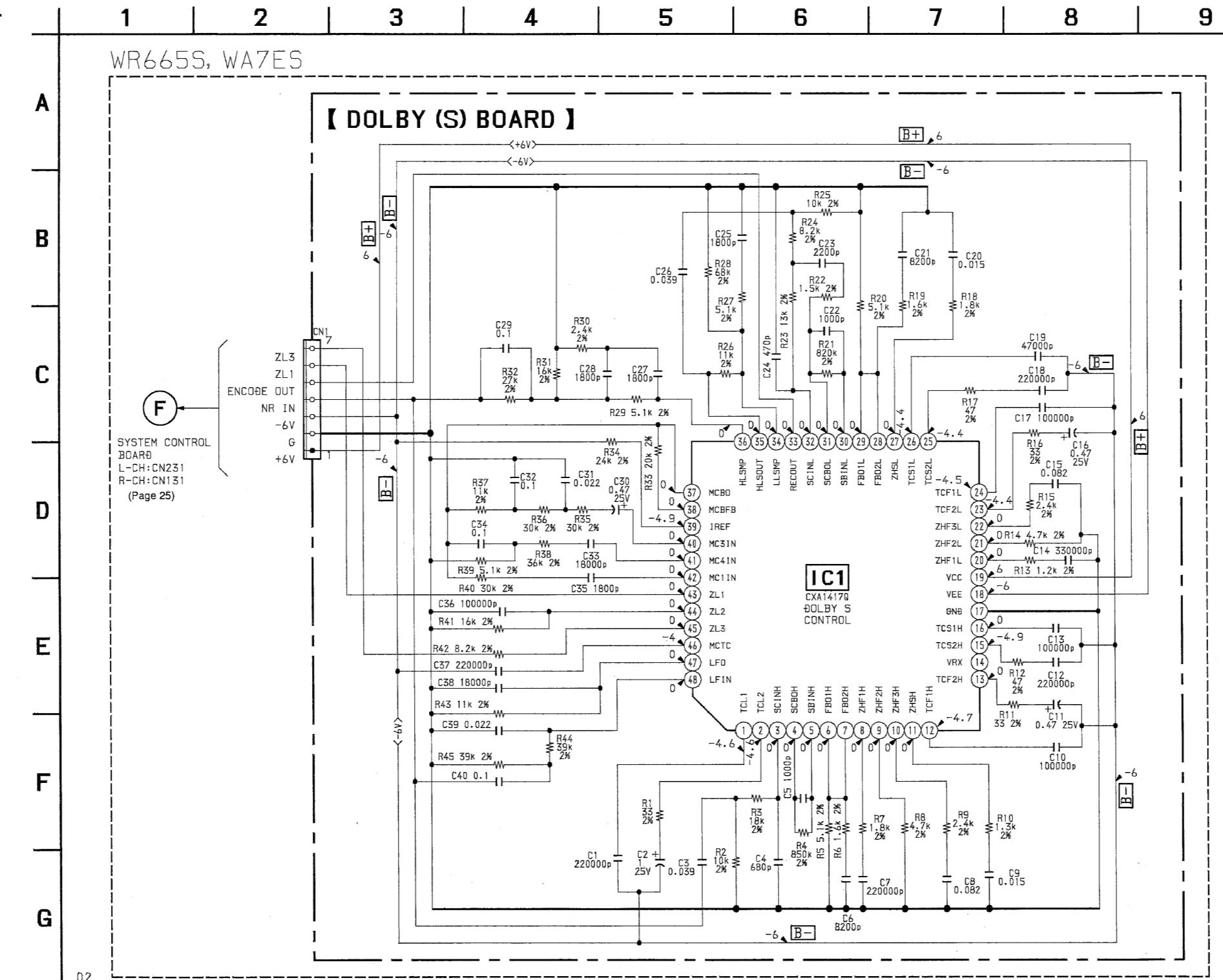
- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : Through hole.
- ◆ : Pattern on the side which is seen.
- ◆◆ : Pattern of the rear side.

## 5-6. PRINTED WIRING BOARDS (DOLBY (S) SECTION)

- Refer to page 16 for Semiconductor Lead Layouts.



## 5-7. SCHEMATIC DIAGRAM (DOLBY (S) SECTION)



No

- : parts extracted from the component side.
- : Through hole.
- : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated)

6

**Pattern face side :** Parts on the pattern face side seen from the pattern face are indicated.  
**(Conductor Side)**

**Parts face side :** Parts on the parts face side seen from the parts face are indicated.  
**(Component side)**

Ne

All capacitors are in  $\mu$  F unless otherwise noted. pF:  $\mu$   $\mu$  F  
 60WV or less are not indicated except for electrolytics and  
 tantalums.

All resistors are in  $\Omega$  and  $1/4$ W or less unless otherwise  
 specified.

% : indicates tolerance.

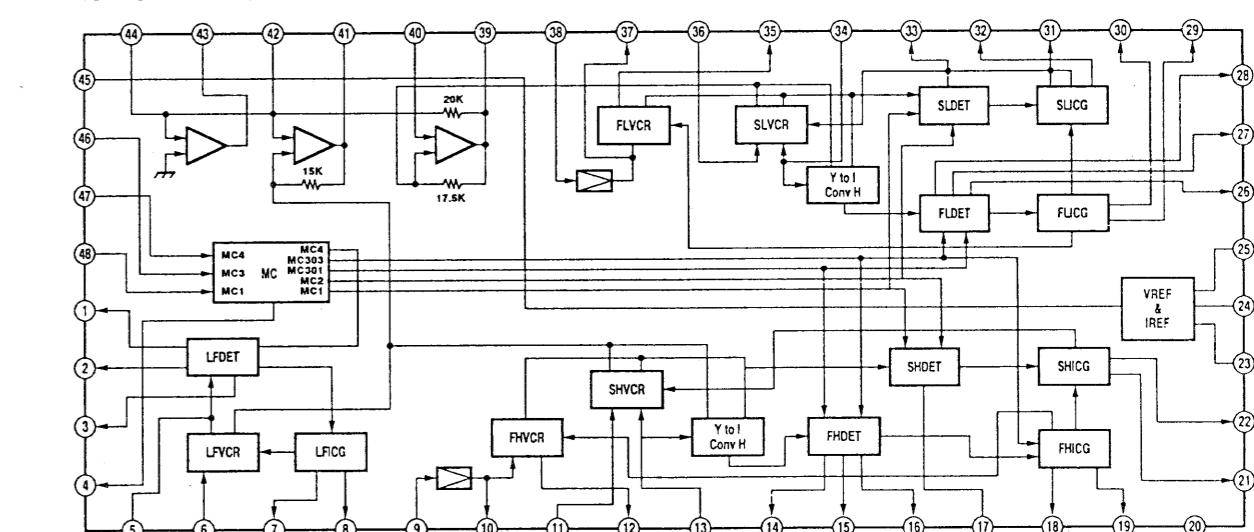
**B+** : B+ Line

**B-** : B- Line

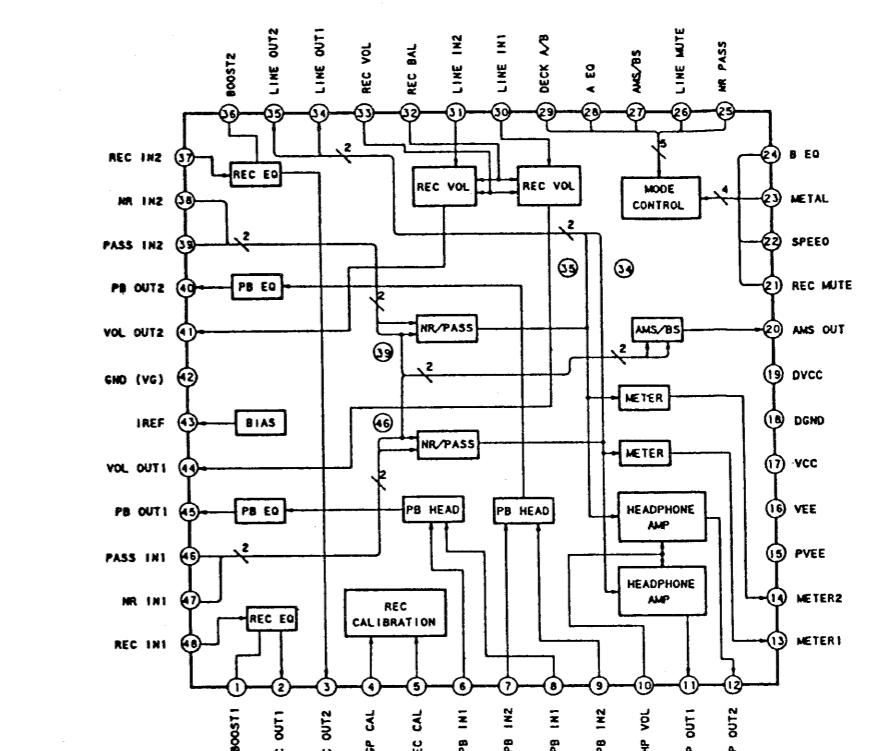
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under  
 no-signal (detuned) conditions.  
 no mark : STOP
- Voltages are taken with a VOM (Input impedance  $10M\Omega$ ).  
 Voltage variations may be noted due to normal production  
 tolerances.

## ● IC BLOCK DIAGRAMS

IC1 CXA1417Q



IC521 CXA1599Q



## SECTION 6 EXPLODED VIEWS

### NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

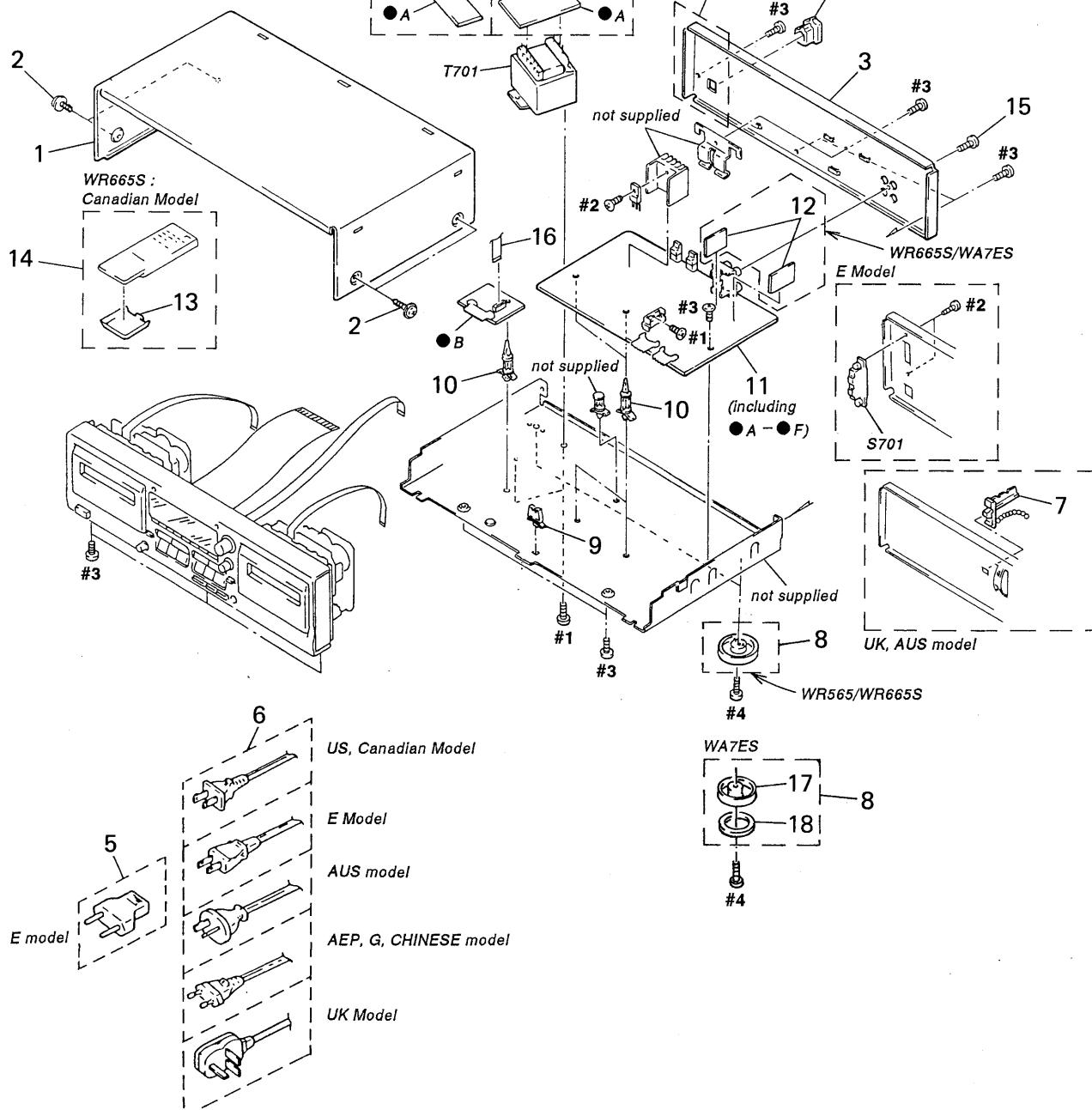
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation  
CND : Canadian  
G : German  
AUS : Australian  
CH : Chinese

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 6-1. CHASSIS SECTION

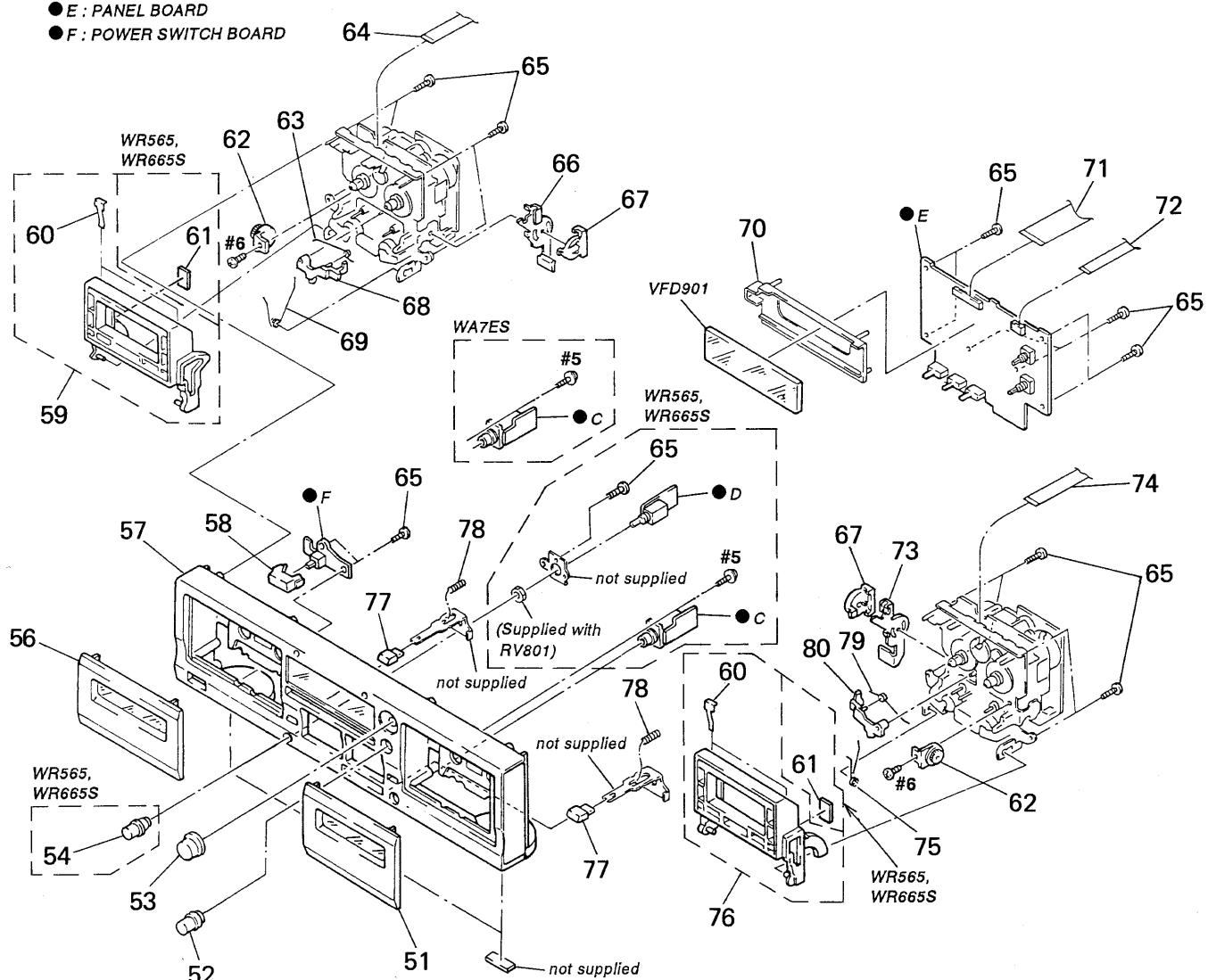
- A : POWER TRANSFORMER BOARD
- B : CONNECTOR BOARD



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 1	4-943-088-41	CASE		8	X-3369-843-1	FOOT ASSY (F58175S)	(WR565:AEP, UK, E, G, AUS, CH/WR665S:AEP, UK, E, G, AUS, CH)
2	3-363-099-01	SCREW (CASE 3 TP2)		8	X-4941-291-1	FOOT ASSY (F58175S)	(WA7ES)
* 3	3-920-372-01	PANEL, BACK (WR565:US)		* 9	4-308-840-11	HOLDER, WIRE	
* 3	3-920-372-11	PANEL, BACK (WR565:AEP, G)		* 10	3-346-265-31	HOLDER, PC BOARD	
* 3	3-920-372-21	PANEL, BACK (WR565:UK)		* 11	A-2007-311-A	SYSTEM CONTROL BOARD, COMPLETE	(WR565:US, CND, AEP, UK, G, CH)
* 3	3-920-372-31	PANEL, BACK (WR565:E)		* 11	A-2007-313-A	SYSTEM CONTROL BOARD, COMPLETE	(WR565:AUS)
* 3	3-920-372-41	PANEL, BACK (WR565:AUS)		* 11	A-2007-314-A	SYSTEM CONTROL BOARD, COMPLETE	(WR565:E)
* 3	3-920-372-51	PANEL, BACK (WR565:CND)		* 11	A-2007-315-A	SYSTEM CONTROL BOARD, COMPLETE	(WR665S:US, CND, AEP, UK, G, CH)
* 3	3-920-372-61	PANEL, BACK (WR565:CH)		* 11	A-2007-317-A	SYSTEM CONTROL BOARD, COMPLETE	(WR665S:AUS)
* 3	3-920-373-01	PANEL, BACK (WR665S:US)		* 11	A-2007-318-A	SYSTEM CONTROL BOARD, COMPLETE	(WR665S:E)
* 3	3-920-373-11	PANEL, BACK (WR665S:AEP, G)		* 11	A-2007-365-A	SYSTEM CONTROL BOARD, COMPLETE (WA7ES)	
* 3	3-920-373-21	PANEL, BACK (WR665S:UK)		* 12	A-2007-416-A	DOLBY (S) BOARD, COMPLETEE (DECK A)	(WA7ES, WR665S)
* 3	3-920-373-31	PANEL, BACK (WR665S:E)		13	2-181-754-01	COVER, BATTERY (WR665S:CA)	
* 3	3-920-373-41	PANEL, BACK (WR665S:AUS)		14	1-465-738-11	REMOTE COMMANDER (WR665S:CA)	
* 3	3-920-373-51	PANEL, BACK (WR665S:CND)		15	3-704-515-01	SCREW (BV/RING)	
* 3	3-920-373-61	PANEL, BACK (WA7ES)		16	1-765-216-11	WIRE (FLAT TYPE) (11 CORE)	
* 3	3-920-373-71	PANEL, BACK (WR665S:CH)		17	3-318-688-51	FOOT (F58175S) (WA7ES)	
* 4	3-703-244-00	BUSHING (2104), CORD (AEP, UK, G, AUS, CH)		18	4-923-836-11	CUSHION (WA7ES)	
4	3-703-571-11	BUSHING (S) (4516), CORD (WA7ES/WR565:US, CND, E/WR665S:US, CND, E)		18	4-923-836-21	CUSHION (WA7ES)	
△5	1-569-007-11	ADAPTER, CONVERSION 2P (E)		△S701	1-692-155-11	SELECTOR, POWER VOLTAGE (E)	
△6	1-551-188-XX	CORD, POWER (E)		△T701	1-427-782-11	TRANSFORMER, POWER (US, CND)	
△6	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, CND)		△T701	1-427-783-11	TRANSFORMER, POWER (AEP, UK, G, AUS, CH)	
△6	1-575-651-21	CORD, POWER (AEP, G, CH)		△T701	1-427-784-11	TRANSFORMER, POWER (E)	
△6	1-696-586-11	CORD, POWER (UK)					
△6	1-696-845-11	CORD, POWER (AUS)					
7	4-956-370-12	BAND, PLUG FIXED (UK, AUS)					
8	X-3369-842-1	FOOT ASSY (F58175S) (WR565:US, CND/WR665S:US, CND)					

## 6-2. FRONT PANEL SECTION

- C : HEADPHONE BOARD
- D : PITCH CONTROL BOARD
- E : PANEL BOARD
- F : POWER SWITCH BOARD



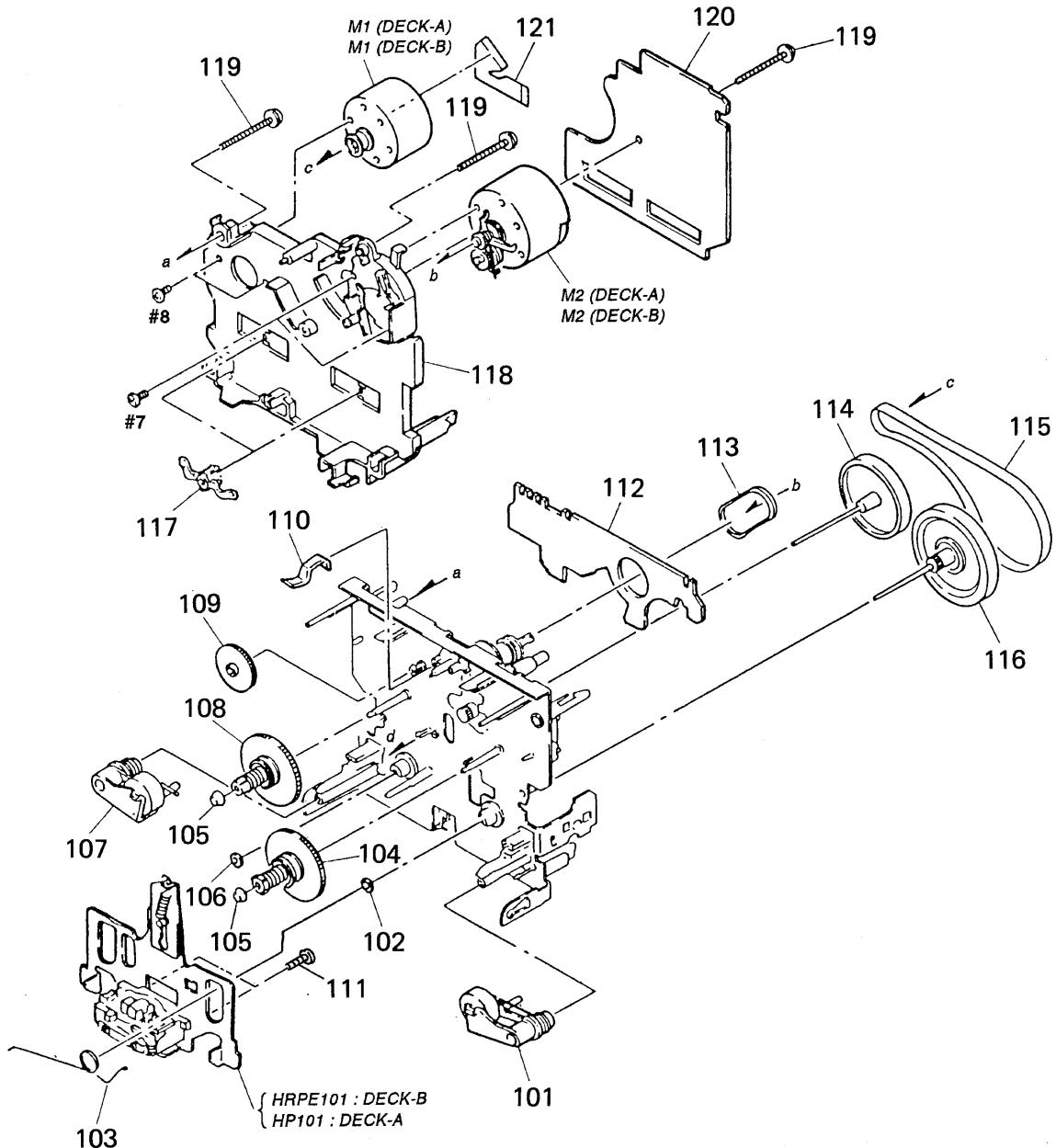
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3369-653-1	LID (B) ASSY, CASSETTE (WR565)		62	3-354-963-01	DAMPER	
51	X-3369-655-1	LID (B) ASSY, CASSETTE (WR665S)		63	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
51	X-3369-657-1	LID (B) ASSY, CASSETTE (WA7ES)		64	1-765-214-11	WIRE (FLAT TYPE) (7 CORE)	
52	3-367-431-01	KNOB (BAL)		65	4-951-620-01	SCREW (2.6×8), +BVT	
53	3-909-661-01	KNOB (REC)		* 66	3-354-954-01	LEVER (LOCK LEVER R)	
54	3-920-370-01	KNOB (TS) (WR565, WR665S)		67	3-354-957-01	JOINT (LOCK LEVER)	
56	X-3369-652-1	LID (A) ASSY, CASSETTE (WR565)		68	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
56	X-3369-654-1	LID (A) ASSY, CASSETTE (WR665S)		69	3-354-960-01	SPRING (LOADING R), TORSION	
56	X-3369-656-1	LID (A) ASSY, CASSETTE (WA7ES)		* 70	3-377-337-11	HOLDER (FL)	
57	X-3369-646-1	PANEL ASSY, FRONT (WR565:US, CND)		71	1-765-217-11	WIRE (FLAT TYPE) (37 CORE)	
57	X-3369-647-1	PANEL ASSY, FRONT (WR565:AEP, UK, E, G, AUS, CH)		72	1-765-215-11	WIRE (FLAT TYPE) (7 CORE)	
57	X-3369-648-1	PANEL ASSY, FRONT (WR665S:US)		* 73	3-354-953-01	LEVER (LOCK LEVER L)	
57	X-3369-649-1	PANEL ASSY, FRONT (WR665S:CND)		74	1-765-213-11	WIRE (FLAT TYPE) (7 CORE)	
57	X-3369-650-1	PANEL ASSY, FRONT (WR665S:CH)		75	3-354-959-01	SPRING (LOADING L), TORSION	
57	X-3369-651-1	PANEL ASSY, FRONT (WA7ES)		76	A-2004-501-A	HOLDER (L) ASSY, CASSETTE (WA7ES)	
58	3-354-932-01	BUTTON (POWER)		76	A-4325-163-A	HOLDER (L) ASSY, CASSETTE (WR565, WR665S)	
59	A-2004-502-A	HOLDER (R) ASSY, CASSETTE (WA7ES)		77	3-377-328-11	BUTTON (EJECT)	
59	A-4325-164-A	HOLDER (R) ASSY, CASSETTE (WR565, WR665S)		78	3-382-382-11	SPRING, COMPRESSION	
60	3-308-823-11	DETENT, CASSETTE		79	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
* 61	3-387-151-01	CUSHION, RUBBER (WR565, WR665S)		80	3-354-955-01	LEVER (EJ SAFTY LEVER L)	

### 6-3. MECHANISM SECTION 1

(TCM-190RA14CL : DECK-A) : TC-WR565/WR665S

(TCM-190RA12CL : DECK-A) : TC-WA7ES

(TCM-190RB12CL : DECK-B) : TC-WR565/WR665S/TC-WA7ES



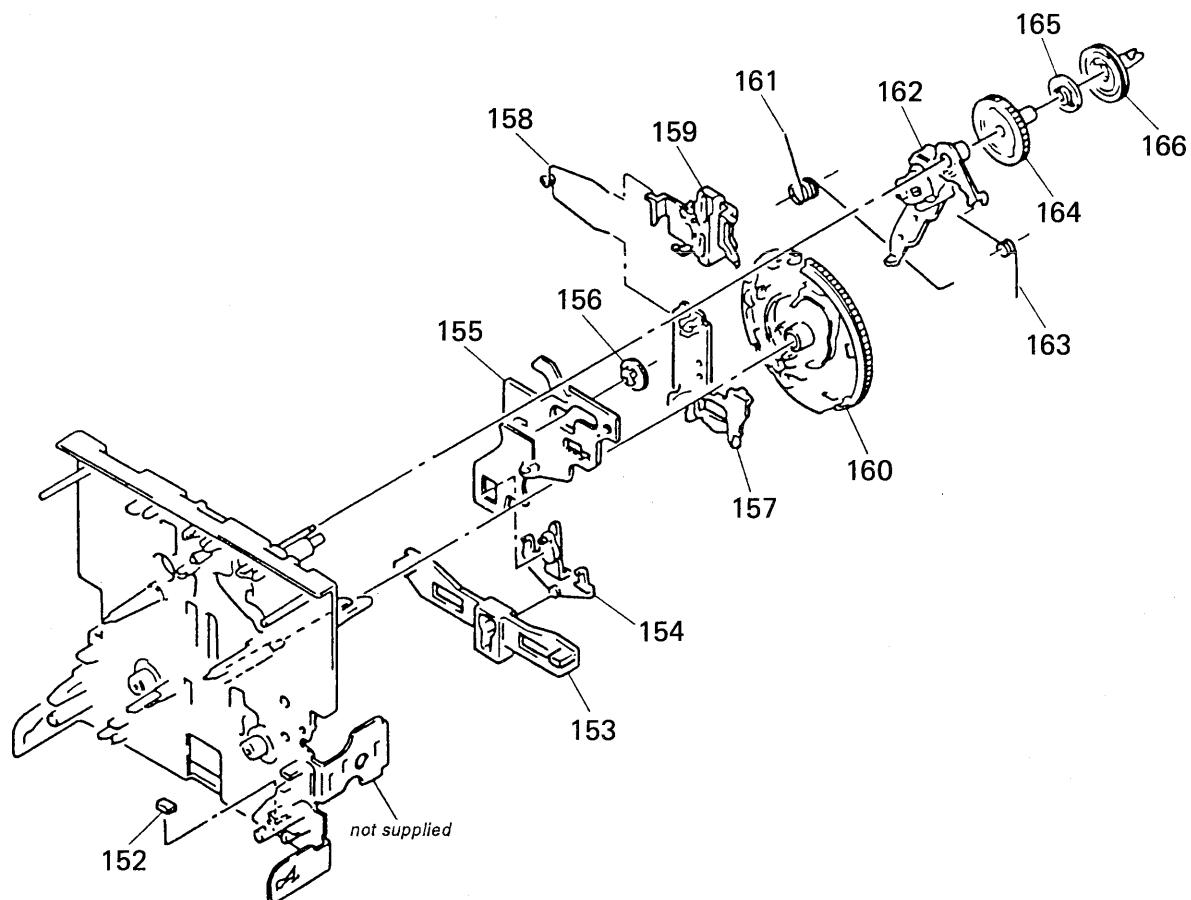
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3366-047-1	LEVER (PINCH F) ASSY		116	X-3367-629-1	FLYWHEEL (FWD) ASSY	
102	3-356-713-01	WASHER		117	3-575-321-00	RETAINER, THRUST, CAPSTAN	
103	3-907-362-01	SPRING, TORSION		118	3-359-436-11	BASE (THRUST RETAINER), FITTING	
104	X-3366-070-1	TABLE ASSY, REEL		119	3-359-414-01	SCREW (+PTPWH 2×23)	
105	3-362-308-01	CAP (REEL)		* 120	A-2007-040-A	AUDIO BOARD, COMPLETEE (DECK B)	
106	3-356-714-01	WASHER		* 120	A-2007-266-A	AUDIO BOARD, COMPLETEE (DECK A)	
107	X-3366-048-1	LEVER (PINCH R) ASSY					(WA7ES)
108	X-3366-971-1	TABLE ASSY (B), REEL		* 120	A-2007-339-A	AUDIO BOARD, COMPLETEE (DECK A)	
109	3-359-424-01	GEAR (REV GEAR)					(WR565, WR665S)
110	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF		121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
111	3-388-848-01	SCREW (P2×6) (B TIGHT)		HP101	A-2003-757-A	BASE ASSY, HEAD (PLAY BACK) (DECK A)	
* 112	1-638-020-11	LEAF SW BOARD (DECK A)		HRPE101A	-2003-930-A	BASE ASSY, HEAD (RECORD, PLAYBACK, ERASE) (DECK B)	
* 112	1-638-020-11	LEAF SW BOARD (DECK B)					
113	3-359-466-01	BELT (FR), SQUARE		M1	X-3365-377-2	MOTOR ASSY, CAPSTAN (DECK A)	
114	X-3367-630-1	FLYWHEEL (REV) ASSY		M1	X-3365-377-2	MOTOR ASSY, CAPSTAN (DECK B)	
115	3-359-417-01	BELT (FLAT), CAPSTAN		M2	X-3363-501-1	MOTOR ASSY, REEL (DECK A)	
				M2	X-3363-501-1	MOTOR ASSY, REEL (DECK B)	

#### 6-4. MECHANISM SECTION 2

(TCM-190RA14CL : DECK-A) : TC-WR565/WR665S

(TCM-190RA12CL : DECK-A) : TC-WA7ES

(TCM-190RB12CL : DECK-B) : TC-WR565/WR665S/TC-WA7ES



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
152	3-359-469-01	SPACER		160	3-359-420-01	GEAR (CAM GEAR)	
153	3-359-425-01	SLIDER (REVERSE SLIDER)		161	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
154	3-359-426-01	LEVER (REVERSE LEVER)		162	X-3366-569-1	ARM ASSY, FR	
* 155	3-359-415-01	SLIDER (TRIGGER SLIDER)		163	3-924-185-11	SPRING (FR ARM), TORSION	
156	3-359-448-01	GEAR (TRIGGER)		164	3-359-419-11	GEAR (FR GEAR)	
157	3-359-427-01	SLIDER (LEVERSE SLIDER)		165	3-359-421-01	CLUTCH (REEL DISK)	
158	3-359-454-01	SPRING, TORSION		166	3-359-418-01	PULLEY (FR PULLEY)	
159	3-359-429-01	SLIDER (BRAKE PLATE)					

**SECTION 7**  
**ELECTRICAL PARTS LIST**

**AUDIO (DECK A)**

**AUDIO (DECK B)**

**NOTE :**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**

All resistors are in ohms

METAL : Metal-film resistor

METAL OXIDE : Metal oxide-film resistor

F : nonflammable

• Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• **SEMICONDUCTORS**

In each case,  $u$  :  $\mu$  , for example :

$uA....$  :  $\mu A....$  ,  $uPA....$  :  $\mu PA....$

$uPB....$  :  $\mu PB....$  ,  $uPC....$  :  $\mu PC....$

$uPD....$  :  $\mu PD....$

• **CAPACITORS**

$uF$  :  $\mu F$

• **COILS**

$uH$  :  $\mu H$

• Abbreviation

CND : Canadian

G : German

AUS : Australian

CH : Chinese

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark				
*	A-2007-266-A	AUDIO BOARD, COMPLETE (DECK A) (WAT7ES)					< TRANSISTOR >				
*	A-2007-339-A	AUDIO BOARD, COMPLETE (DECK A)									
*****											
< CAPACITOR >											
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
C12	1-136-157-00	FILM	0.022uF	5%	50V	R12	1-216-025-00	METAL GLAZE	100	5%	1/10W
C13	1-124-234-00	ELECT	22uF	20%	16V	R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	R14	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
C22	1-136-157-00	FILM	0.022uF	5%	50V	R22	1-216-025-00	METAL GLAZE	100	5%	1/10W
C23	1-124-234-00	ELECT	22uF	20%	16V	R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	R24	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
C31	1-124-234-00	ELECT	22uF	20%	16V	R31	1-216-033-00	METAL CHIP	220	5%	1/10W
C32	1-124-234-00	ELECT	22uF	20%	16V	R32	1-216-033-00	METAL CHIP	220	5%	1/10W
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V	R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
< JACK >											
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD									
CNJ72	1-764-902-11	CONNECTOR, FFC/FPC 4P									
< CONNECTOR >											
* CNP30	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P									
		(WR565, WR665S)									
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P									
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P									
*****											
< IC >											
IC31	8-759-106-02	IC	uPC4570G2								
< JUMPER RESISTOR >											
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W	C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W	C12	1-136-157-00	FILM	0.022uF	5%	50V
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W	C13	1-124-234-00	ELECT	22uF	20%	16V
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W	C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W	C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
JW101	1-216-295-00	METAL CHIP	0	5%	1/8W	C22	1-136-157-00	FILM	0.022uF	5%	50V
						C23	1-124-234-00	ELECT	22uF	20%	16V
						C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
						C31	1-124-234-00	ELECT	22uF	20%	16V
						C32	1-124-234-00	ELECT	22uF	20%	16V

## AUDIO (DECK B)

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark			
C33	1-124-234-00	ELECT	22uF	20%	16V	< TRANSISTOR >					
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	Q51	8-729-808-01	TRANSISTOR	2SD1622-S		
C52	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	Q52	8-729-808-01	TRANSISTOR	2SD1622-S		
C53	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	Q53	8-729-808-01	TRANSISTOR	2SD1622-S		
C54	1-136-601-11	FILM	0.01uF	5%	630V	Q71	8-729-216-22	TRANSISTOR	2SA1162-G		
C56	1-164-505-11	CERAMIC CHIP	2.2uF	16V		< RESISTOR >					
C57	1-164-346-11	CERAMIC CHIP	1uF	16V		R11	1-216-099-00	METAL CHIP	120K 5% 1/10W		
C71	1-164-346-11	CERAMIC CHIP	1uF	16V		R12	1-216-025-00	METAL GLAZE	100 5% 1/10W		
C80	1-124-234-00	ELECT	22uF	20%	16V	R13	1-216-100-00	METAL GLAZE	130K 5% 1/10W		
C81	1-164-232-11	CERAMIC CHIP	0.01uF	50V		R14	1-216-067-00	METAL CHIP	5.6K 5% 1/10W		
C82	1-136-157-00	FILM	0.022uF	5%	50V	R21	1-216-099-00	METAL CHIP	120K 5% 1/10W		
C83	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	R22	1-216-025-00	METAL GLAZE	100 5% 1/10W		
C84	1-136-478-11	FILM	470PF	5%	630V	R23	1-216-100-00	METAL GLAZE	130K 5% 1/10W		
C85	1-136-433-11	FILM	100PF	5%	630V	R24	1-216-067-00	METAL CHIP	5.6K 5% 1/10W		
C86	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	R31	1-216-033-00	METAL CHIP	220 5% 1/10W		
C87	1-136-273-91	FILM	75PF	5%	630V	R32	1-216-033-00	METAL CHIP	220 5% 1/10W		
C88	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	R33	1-216-065-00	METAL CHIP	4.7K 5% 1/10W		
C89	1-124-234-00	ELECT	22uF	20%	16V	R51	1-216-097-00	METAL CHIP	100K 5% 1/10W		
C90	1-107-584-11	CERAMIC	4PF	0.25PF	500V	R52	1-216-097-00	METAL CHIP	100K 5% 1/10W		
C91	1-164-232-11	CERAMIC CHIP	0.01uF	50V		R53	1-216-073-00	METAL CHIP	10K 5% 1/10W		
C92	1-136-157-00	FILM	0.022uF	5%	50V	R54	1-216-309-00	METAL CHIP	5.6 5% 1/10W		
C93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	R55	1-216-309-00	METAL CHIP	5.6 5% 1/10W		
C94	1-136-478-11	FILM	470PF	5%	630V	R57	1-216-298-00	METAL CHIP	2.2 5% 1/10W		
C95	1-136-433-11	FILM	100PF	5%	630V	R71	1-216-082-00	METAL GLAZE	24K 5% 1/10W		
C96	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	R72	1-216-081-00	METAL CHIP	22K 5% 1/10W		
C97	1-136-273-91	FILM	75PF	5%	630V	R73	1-216-089-00	METAL CHIP	47K 5% 1/10W		
C98	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	R74	1-216-089-00	METAL CHIP	47K 5% 1/10W		
C99	1-164-005-11	CERAMIC CHIP	0.47uF	25V		R81	1-216-073-00	METAL CHIP	10K 5% 1/10W		
< CONNECTOR >											
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD					R82	1-216-085-00	METAL CHIP	33K 5% 1/10W	
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P					R83	1-216-001-00	METAL CHIP	10 5% 1/10W	
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD					R84	1-216-101-00	METAL CHIP	150K 5% 1/10W	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P					R85	1-216-075-00	METAL CHIP	12K 5% 1/10W	
CNP72	1-764-902-11	CONNECTOR, FFC/FPC 4P					R91	1-216-073-00	METAL CHIP	10K 5% 1/10W	
* CNP75	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P					R92	1-216-085-00	METAL CHIP	33K 5% 1/10W	
< DIODE >											
D31	8-719-404-46	DIODE MA110					R93	1-216-001-00	METAL CHIP	10 5% 1/10W	
< IC >											
IC31	8-759-106-02	IC uPC4570G2					R94	1-216-101-00	METAL CHIP	150K 5% 1/10W	
IC81	8-759-106-56	IC uPC1297CA					R95	1-216-075-00	METAL CHIP	12K 5% 1/10W	
< COIL >											
L81	1-410-780-11	INDUCTOR	27mH								
L91	1-410-780-11	INDUCTOR	27mH								
< VARIABLE RESISTOR >											
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL, L)					RV21	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL, R)		
RV71	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED, NORMAL)					RV72	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED, HIGH)		
RV81	1-241-786-11	RES, ADJ, CARBON 22K (REC BIAS, L)					RV91	1-241-786-11	RES, ADJ, CARBON 22K (REC BIAS, R)		

**AUDIO (DECK B)**
**DOLBY (S)**

Ref. No.	Part No.	Description	Remark
< RELAY >			
RY31	1-515-913-11	RELAY	
< TRANSFORMER >			
T51	1-406-417-11	COIL, BIAS OSCILLATION	
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR	
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR	
< TEST PIN >			
* TP81	1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P	
*****			
*	A-2007-416-A	DOLBY (S) BOARD, COMPLETE (WA7ES, WR665S)	
*****			
< CAPACITOR >			

C1	1-164-222-11	CERAMIC CHIP	0.22uF	25V
C2	1-135-177-21	TANTALUM CHIP	1uF	20%
C3	1-104-558-11	FILM CHIP	0.039uF	5%
C4	1-163-007-11	CERAMIC CHIP	680PF	10%
C5	1-163-009-11	CERAMIC CHIP	0.001uF	10%
C6	1-164-717-11	CERAMIC CHIP	0.0082uF	5%
C7	1-164-222-11	CERAMIC CHIP	0.22uF	25V
C8	1-104-562-11	FILM CHIP	0.082uF	5%
C9	1-104-553-11	FILM CHIP	0.015uF	5%
C10	1-165-319-11	CERAMIC CHIP	0.1uF	50V
C11	1-135-145-11	TANTALUM CHIP	0.47uF	10%
C12	1-164-222-11	CERAMIC CHIP	0.22uF	25V
C13	1-165-319-11	CERAMIC CHIP	0.1uF	50V
C14	1-162-568-11	CERAMIC CHIP	0.33uF	10%
C15	1-104-562-11	FILM CHIP	0.082uF	5%
C16	1-135-145-11	TANTALUM CHIP	0.47uF	10%
C17	1-165-319-11	CERAMIC CHIP	0.1uF	50V
C18	1-164-222-11	CERAMIC CHIP	0.22uF	25V
C19	1-163-035-00	CERAMIC CHIP	0.047uF	50V
C20	1-104-553-11	FILM CHIP	0.015uF	5%
C21	1-164-717-11	CERAMIC CHIP	0.0082uF	5%
C22	1-163-009-11	CERAMIC CHIP	0.001uF	10%
C23	1-164-161-11	CERAMIC CHIP	0.0022uF	10%
C24	1-163-005-11	CERAMIC CHIP	470PF	10%
C25	1-163-012-00	CERAMIC CHIP	0.0018uF	10%
C26	1-104-558-11	FILM CHIP	0.039uF	5%
C27	1-163-012-00	CERAMIC CHIP	0.0018uF	10%
C28	1-163-012-00	CERAMIC CHIP	0.0018uF	10%
C29	1-104-563-11	FILM CHIP	0.1uF	5%
C30	1-135-145-11	TANTALUM CHIP	0.47uF	10%
C31	1-104-555-11	FILM CHIP	0.022uF	5%
C32	1-104-563-11	FILM CHIP	0.1uF	5%

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
CN1	1-695-092-11	SOCKET, CONNECTOR 7P	
< IC >			
IC1	8-752-056-51	IC CXA1417Q	
< RESISTOR >			
R1	1-216-615-11	METAL CHIP	33 0.5% 1/10W
R2	1-208-806-11	METAL GLAZE	10K 2% 1/10W
R3	1-208-812-11	METAL GLAZE	18K 2% 1/10W
R4	1-216-119-00	METAL CHIP	820K 5% 1/10W
R5	1-208-799-11	METAL GLAZE	5.1K 2% 1/10W
R6	1-208-787-11	METAL GLAZE	1.6K 2% 1/10W
R7	1-216-657-11	METAL CHIP	1.8K 0.5% 1/10W
R8	1-216-667-11	METAL CHIP	4.7K 0.5% 1/10W
R9	1-208-791-11	METAL GLAZE	2.4K 2% 1/10W
R10	1-216-052-00	METAL CHIP	1.3K 5% 1/10W
R11	1-216-615-11	METAL CHIP	33 0.5% 1/10W
R12	1-216-619-11	METAL CHIP	47 0.5% 1/10W
R13	1-208-784-11	METAL GLAZE	1.2K 2% 1/10W
R14	1-216-667-11	METAL CHIP	4.7K 0.5% 1/10W
R15	1-208-791-11	METAL GLAZE	2.4K 2% 1/10W
R16	1-216-615-11	METAL CHIP	33 0.5% 1/10W
R17	1-216-619-11	METAL CHIP	47 0.5% 1/10W
R18	1-216-657-11	METAL CHIP	1.8K 0.5% 1/10W
R19	1-208-787-11	METAL GLAZE	1.6K 2% 1/10W
R20	1-208-799-11	METAL GLAZE	5.1K 2% 1/10W
R21	1-216-119-00	METAL CHIP	820K 5% 1/10W
R22	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R23	1-216-678-11	METAL CHIP	13K 0.5% 1/10W
R24	1-216-673-11	METAL CHIP	8.2K 0.5% 1/10W
R25	1-208-806-11	METAL GLAZE	10K 2% 1/10W
R26	1-216-676-11	METAL CHIP	11K 0.5% 1/10W
R27	1-208-799-11	METAL GLAZE	5.1K 2% 1/10W
R28	1-216-695-11	METAL CHIP	68K 0.5% 1/10W
R29	1-208-799-11	METAL GLAZE	5.1K 2% 1/10W
R30	1-208-791-11	METAL GLAZE	2.4K 2% 1/10W
R31	1-208-811-11	METAL GLAZE	16K 2% 1/10W
R32	1-216-685-11	METAL CHIP	27K 0.5% 1/10W

<b>DOLBY (S)</b>	<b>LEAF SW (DECK A)</b>	<b>LEAF SW (DECK B)</b>	<b>SYSTEM CONTROL</b>	<b>TRANSFORMER</b>	<b>PANEL</b>	
			<b>CONNECTOR</b>	<b>POWER SWITCH</b>	<b>PITCH CONTROL</b>	<b>HEADPHONE</b>

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	
R33	1-208-813-11	METAL GLAZE	20K	2%	1/10W			< SWITCH >				
R34	1-216-684-11	METAL CHIP	24K	0.5%	1/10W	S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)				
R35	1-208-817-11	METAL GLAZE	30K	2%	1/10W	S82	1-571-281-21	SWITCH, LEAF (CrO <sub>2</sub> DET)				
R36	1-208-817-11	METAL GLAZE	30K	2%	1/10W	S83	1-571-281-21	SWITCH, LEAF (METAL DET)				
R37	1-216-676-11	METAL CHIP	11K	0.5%	1/10W	S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE A)				
R38	1-208-819-11	METAL GLAZE	36K	2%	1/10W	S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE B)				
R39	1-208-799-11	METAL GLAZE	5.1K	2%	1/10W	S86	1-571-281-21	SWITCH, LEAF (HALF DET)				
R40	1-208-817-11	METAL GLAZE	30K	2%	1/10W	*****	*****	*****	*****	*****	*****	
R41	1-208-811-11	METAL GLAZE	16K	2%	1/10W	*	A-2007-311-A	SYSTEM CONTROL BOARD, COMPLETE				
R42	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W			(WR565:US, CND, AEP, UK, G, CH)				
R43	1-216-676-11	METAL CHIP	11K	0.5%	1/10W	*	A-2007-365-A	SYSTEM CONTROL BOARD, COMPLETE (WA7ES)				
R44	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	*	A-2007-313-A	SYSTEM CONTROL BOARD, COMPLETE				
R45	1-216-689-11	METAL CHIP	39K	0.5%	1/10W			(WR565:AUS)				
*****												
*	1-638-020-11	LEAF SW BOARD (DECK A)	*****			*	A-2007-314-A	SYSTEM CONTROL BOARD, COMPLETE				
			< CONNECTOR >					(WR565:E)				
*	CNP81	1-568-850-11	SOCKET, CONNECTOR 7P	*****			*	A-2007-317-A	SYSTEM CONTROL BOARD, COMPLETE			
				< IC >				(WR665S:AUS)				
IC81	8-749-924-10	IC	PHONT REFLECTOR	NJL5165K-B	(H1)	*	A-2007-318-A	SYSTEM CONTROL BOARD, COMPLETE				
								(WR665S:E)				
				< RESISTOR >			*	A-2007-315-A	SYSTEM CONTROL BOARD, COMPLETE			
R84	1-249-417-11	CARBON	1K	5%	1/4W			(WR665S:US, CND, AEP, UK, G, CH)				
R85	1-249-408-11	CARBON	180	5%	1/4W			*****	*****	*****	*****	
				< SWITCH >								
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)										
S82	1-571-281-21	SWITCH, LEAF (CrO <sub>2</sub> DET)										
S86	1-571-281-21	SWITCH, LEAF (HALF DET)										
*****												
*	1-638-020-11	LEAF SW BOARD (DECK B)	*****									
			< CONNECTOR >									
*	CNP81	1-568-850-11	SOCKET, CONNECTOR 7P	*****								
				< IC >								
IC81	8-749-924-10	IC	PHONT REFLECTOR	NJL5165K-B	(H1)							
				< RESISTOR >								
R81	1-249-414-11	CARBON	560	5%	1/4W	C101	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
R82	1-247-818-11	CARBON	300	5%	1/4W	C102	1-124-907-11	ELECT	10uF	20%	50V	
R83	1-247-834-11	CARBON	1.3K	5%	1/4W	C103	1-124-907-11	ELECT	10uF	20%	50V	
R84	1-249-417-11	CARBON	1K	5%	1/4W	C104	1-137-368-11	FILM	0.0047uF	5%	50V	
R85	1-249-408-11	CARBON	180	5%	1/4W	C105	1-136-165-00	FILM	0.1uF	5%	50V	
				< CAPACITOR >								
							C106	1-136-163-00	FILM	0.068uF	5%	50V
							C107	1-124-907-11	ELECT	10uF	20%	50V
							C108	1-124-925-11	ELECT	2.2uF	20%	100V
							C109	1-162-282-31	CERAMIC	100PF	10%	50V
							C110	1-124-925-11	ELECT	2.2uF	20%	100V

**SYSTEM CONTROL****TRANSFORMER****PANEL****CONNECTOR****POWER SWITCH****PITCH CONTROL****HEADPHONE**

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
C111	1-124-927-11	ELECT	4.7uF	20%	100V	C529	1-124-443-00	ELECT	100uF	20%	10V
C112	1-124-925-11	ELECT	2.2uF	20%	100V	C541	1-130-494-11	MYLAR	0.082uF	5%	50V
C113	1-124-907-11	ELECT	10uF	20%	50V	C542	1-137-457-11	FILM	0.0027uF	5%	50V
					(WA7ES, WR665S)	C543	1-136-161-00	FILM	0.047uF	5%	50V
C114	1-124-916-11	ELECT	22uF	20%	63V	C544	1-137-366-11	FILM	0.0022uF	5%	50V
C115	1-124-927-11	ELECT	4.7uF	20%	100V	C545	1-124-907-11	ELECT	10uF	20%	50V
C116	1-137-342-11	FILM	0.0039uF	50%	50V	C546	1-124-907-11	ELECT	10uF	20%	50V
C121	1-124-927-11	ELECT	4.7uF	20%	100V	C551	1-161-494-00	CERAMIC	0.022uF	25%	
C122	1-124-902-00	ELECT	0.47uF	20%	50V	C701	1-124-927-11	ELECT	4.7uF	20%	100V
C123	1-164-159-11	CERAMIC	0.1uF		50V	C702	1-126-016-11	ELECT	4700uF	20%	16V (WA7ES)
C124	1-124-927-11	ELECT	4.7uF	20%	100V	C702	1-124-898-11	ELECT	4700uF	20%	16V
C125	1-126-962-11	ELECT	3.3uF	20%	50V	C703	1-126-016-11	ELECT	4700uF	20%	16V (WA7ES)
C141	1-124-907-11	ELECT	10uF	20%	50V	C703	1-124-898-11	ELECT	4700uF	20%	16V
C201	1-162-302-11	CERAMIC	0.0022uF	30%	16V	C704	1-124-927-11	ELECT	4.7uF	20%	100V
C202	1-124-907-11	ELECT	10uF	20%	50V	C705	1-124-472-11	ELECT	470uF	20%	10V
C203	1-124-907-11	ELECT	10uF	20%	50V	C706	1-124-927-11	ELECT	4.7uF	20%	100V
C204	1-137-368-11	FILM	0.0047uF	5%	50V	C707	1-124-762-00	ELECT	4700uF	20%	10V
C205	1-136-165-00	FILM	0.1uF	5%	50V	C708	1-126-926-11	ELECT	1000uF	20%	10V
C206	1-136-163-00	FILM	0.068uF	5%	50V	C708	1-124-473-11	ELECT	1000uF	20%	10V (WA7ES)
C207	1-124-907-11	ELECT	10uF	20%	50V	C709	1-124-910-11	ELECT	47uF	20%	50V
C208	1-124-925-11	ELECT	2.2uF	20%	100V	C710	1-124-907-11	ELECT	10uF	20%	50V
C209	1-162-282-31	CERAMIC	100PF	10%	50V	C711	1-124-927-11	ELECT	4.7uF	20%	100V
C210	1-124-925-11	ELECT	2.2uF	20%	100V	C801	1-164-159-11	CERAMIC	0.1uF		50V
C211	1-124-927-11	ELECT	4.7uF	20%	100V	C802	1-124-902-00	ELECT	0.47uF	20%	50V
C212	1-124-925-11	ELECT	2.2uF	20%	100V	C803	1-124-443-00	ELECT	100uF	20%	10V
C213	1-124-907-11	ELECT	10uF	20%	50V	C804	1-164-159-11	CERAMIC	0.1uF		50V
					(WA7ES, WR665S)	C805	1-164-159-11	CERAMIC	0.1uF		50V
C214	1-124-916-11	ELECT	22uF	20%	63V	C810	1-162-288-31	CERAMIC	330PF	10%	50V
					(WA7ES, WR665S)	C811	1-164-159-11	CERAMIC	0.1uF		50V
C215	1-124-927-11	ELECT	4.7uF	20%	100V	C812	1-162-288-31	CERAMIC	330PF	10%	50V
C216	1-137-342-11	FILM	0.0039uF	50%	50V	C813	1-164-159-11	CERAMIC	0.1uF		50V
C221	1-124-927-11	ELECT	4.7uF	20%	100V	C814	1-124-907-11	ELECT	10uF	20%	50V
C222	1-124-902-00	ELECT	0.47uF	20%	50V	C815	1-124-902-00	ELECT	0.47uF	20%	50V
C223	1-164-159-11	CERAMIC	0.1uF		50V	C816	1-126-103-11	ELECT	470uF	20%	16V
C224	1-124-927-11	ELECT	4.7uF	20%	100V	C817	1-126-103-11	ELECT	470uF	20%	16V
C225	1-126-962-11	ELECT	3.3uF	20%	50V	C818	1-124-360-00	ELECT	1000uF	20%	16V
C241	1-124-907-11	ELECT	10uF	20%	50V	C901	1-161-494-00	CERAMIC	0.022uF		25V
C501	1-124-907-11	ELECT	10uF	20%	50V	C902	1-161-494-00	CERAMIC	0.022uF		(PANEL BOARD)
C502	1-126-176-11	ELECT	220uF	20%	10V	C903	1-161-494-00	CERAMIC	0.022uF		(PANEL BOARD)
C503	1-161-494-00	CERAMIC	0.022uF		25V	C904	1-161-494-00	CERAMIC	0.022uF		(PANEL BOARD)
C521	1-124-443-00	ELECT	100uF	20%	10V						25V
C522	1-124-443-00	ELECT	100uF	20%	10V						(PANEL BOARD)
C523	1-124-443-00	ELECT	100uF	20%	10V						(PANEL BOARD)
C524	1-124-902-00	ELECT	0.47uF	20%	50V						25V
C525	1-124-925-11	ELECT	2.2uF	20%	100V						(PANEL BOARD)
C526	1-124-916-11	ELECT	22uF	20%	63V						25V
C527	1-126-916-11	ELECT	1000uF	20%	6.3V						(PANEL BOARD)
C528	1-124-902-00	ELECT	0.47uF	20%	50V						(PANEL BOARD)

**SYSTEM CONTROL****TRANSFORMER****PANEL****CONNECTOR****POWER SWITCH****PITCH CONTROL****HEADPHONE**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C905	1-161-494-00	CERAMIC 0.022uF	25V (PANEL BOARD)	D705	8-719-024-99	DIODE 11ES2-NTA2B	
			< CONNECTOR >	D706	8-719-024-99	DIODE 11ES2-NTA2B	
CN131	1-695-087-11	PIN, CONNECTOR (PC BOARD)	7P (WA7ES, WR665S)	D707	8-719-024-99	DIODE 11ES2-NTA2B	
CN231	1-695-087-11	PIN, CONNECTOR (PC BOARD)	7P (WA7ES, WR665S)	D708	8-719-987-63	DIODE 1N4148M	
* CN502	1-568-826-11	SOCKET, CONNECTOR 7P		D709	8-719-000-78	DIODE UZL-7L2	
* CN801	1-764-700-11	SOCKET, CONNECTOR 37P		D710	8-719-933-33	DIODE HZS6A1L	
* CN802	1-568-826-11	SOCKET, CONNECTOR 7P		D711	8-719-933-33	DIODE HZS6A1L	
* CN803	1-568-826-11	SOCKET, CONNECTOR 7P		D712	8-719-987-63	DIODE 1N4148M	
* CN804	1-568-830-11	SOCKET, CONNECTOR 11P		D713	8-719-987-63	DIODE 1N4148M	
* CN805	1-568-830-11	SOCKET, CONNECTOR 11P (CONNECTOR BOARD)		D714	8-719-000-78	DIODE UZL-7L2	
* CN810	1-568-951-11	PIN, CONNECTOR 2P (CONNECTOR BOARD)		D715	8-719-933-33	DIODE HZS6A1L	
* CN901	1-764-701-11	SOCKET, CONNECTOR 37P (PANEL BOARD)		D801	8-719-987-63	DIODE 1N4148M	
* CN902	1-568-850-11	SOCKET, CONNECTOR 7P (PANEL BOARD)		D802	8-719-987-63	DIODE 1N4148M	
* CN906	1-564-495-11	PIN, CONNECTOR 2P (WR565, WR665S)		D803	8-719-987-63	DIODE 1N4148M	
			< CONNECTOR >	D804	8-719-987-63	DIODE 1N4148M	
				D805	8-719-987-63	DIODE 1N4148M (WR565, WR665S)	
				D806	8-719-987-63	DIODE 1N4148M (WR565, WR665S)	
				D807	8-719-987-63	DIODE 1N4148M	
							< IC >
CNP501	1-506-468-11	PIN, CONNECTOR 3P		IC501	8-752-066-35	IC CXA1563S	
CNP701	1-766-280-11	PIN, CONNECTOR (PC BOARD)	7P	IC502	8-759-634-51	IC M5218AP	
* CNP702	1-568-954-11	PIN, CONNECTOR 5P		IC503	8-759-634-50	IC M5218AL	
* CNP703	1-580-230-31	PIN, CONNECTOR (PC BOARD)	2P (TRANSFORMER BOARD) (EXCEPT E)	IC504	8-759-634-50	IC M5218AL	
CNP704	1-766-280-11	PIN, CONNECTOR (PC BOARD)	7P (TRANSFORMER BOARD)	IC521	8-752-058-57	IC CXA1599Q	
* CNP801	1-691-916-11	CONNECTOR, BOARD TO BOARD		IC541	8-759-634-51	IC M5218AP	
			(CONNECTOR BOARD)	IC701	8-759-634-51	IC M5218AP	
* CNP802	1-691-916-11	CONNECTOR, BOARD TO BOARD		IC801	8-752-862-32	IC CXP82316-053Q	
* CNP803	1-691-916-11	CONNECTOR, BOARD TO BOARD		IC802	8-759-000-48	IC MC14052BCP	
				IC803	8-759-822-38	IC LA6510	
			< DIODE >	IC804	8-759-916-14	IC SN74HC04AN	
D121	8-719-933-33	DIODE HZS6A1L		IC805	8-759-000-48	IC MC14052BCP	
D221	8-719-933-33	DIODE HZS6A1L		IC806	8-759-165-82	IC PST600E-T	
D501	8-719-987-63	DIODE 1N4148M		IC901	8-741-810-59	IC SBX1610-59 (PANEL BOARD)	
D502	8-719-987-63	DIODE 1N4148M					< JACK >
D503	8-719-107-94	DIODE ISS202-1 (WA7ES, WR665S)		J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)	
D504	8-719-107-94	DIODE ISS202-1 (WA7ES, WR665S)		J502	1-568-519-41	JACK, LARGE TYPE (PHONES)	
D505	8-719-107-94	DIODE ISS202-1 (WA7ES, WR665S)					(HEADPHONE BOARD)
D506	8-719-107-94	DIODE ISS202-1 (WA7ES, WR665S)					
D521	8-719-987-63	DIODE 1N4148M					< COIL >
D531	8-719-987-63	DIODE 1N4148M		L801	1-420-872-00	COIL, AIR-CORE	
D541	8-719-987-63	DIODE 1N4148M		L802	1-420-872-00	COIL, AIR-CORE	
D542	8-719-987-63	DIODE 1N4148M					
D701	8-719-024-99	DIODE 11ES2-NTA2B					< FILTER >
D702	8-719-024-99	DIODE 11ES2-NTA2B					
D703	8-719-024-99	DIODE 11ES2-NTA2B		LPF101	1-233-271-11	FILTER, LOW PASS	
D704	8-719-024-99	DIODE 11ES2-NTA2B		LPF201	1-233-271-11	FILTER, LOW PASS	

**SYSTEM CONTROL****TRANSFORMER****PANEL****CONNECTOR****POWER SWITCH****PITCH CONTROL****HEADPHONE**

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
< TRANSISTOR >									
Q101	8-729-900-74	TRANSISTOR	DTC143TS		R102	1-249-421-11	CARBON	2.2K	5% 1/4W
Q102	8-729-900-74	TRANSISTOR	DTC143TS		R103	1-249-420-11	CARBON	1.8K	5% 1/4W
Q121	8-729-922-37	TRANSISTOR	2SD2144S		R104	1-249-441-11	CARBON	100K	5% 1/4W
Q122	8-729-620-05	TRANSISTOR	2SC2603-EF		R105	1-249-424-11	CARBON	3.9K	5% 1/4W
Q201	8-729-900-74	TRANSISTOR	DTC143TS		R109	1-249-429-11	CARBON	10K	5% 1/4W
Q202	8-729-900-74	TRANSISTOR	DTC143TS		R110	1-249-429-11	CARBON	10K	5% 1/4W
Q221	8-729-922-37	TRANSISTOR	2SD2144S		R111	1-249-435-11	CARBON	33K	5% 1/4W
Q222	8-729-620-05	TRANSISTOR	2SC2603-EF		R112	1-247-846-11	CARBON	4.3K	5% 1/4W
Q501	8-729-900-65	TRANSISTOR	DTA144ES		R113	1-247-887-00	CARBON	220K	5% 1/4W
Q502	8-729-900-65	TRANSISTOR	DTA144ES		R114	1-249-429-11	CARBON	10K	5% 1/4W
Q503	8-729-900-65	TRANSISTOR	DTA144ES		R115	1-249-433-11	CARBON	22K	5% 1/4W
Q504	8-729-900-65	TRANSISTOR	DTA144ES		R117	1-249-437-11	CARBON	47K	5% 1/4W
Q505	8-729-900-65	TRANSISTOR	DTA144ES		R118	1-249-425-11	CARBON	4.7K	5% 1/4W
Q521	8-729-119-76	TRANSISTOR	2SA1175-HFE		R119	1-249-429-11	CARBON	10K	5% 1/4W
Q522	8-729-119-76	TRANSISTOR	2SA1175-HFE		R121	1-249-434-11	CARBON	27K	5% 1/4W
Q523	8-729-620-05	TRANSISTOR	2SC2603-EF		R122	1-249-417-11	CARBON	1K	5% 1/4W
Q525	8-729-900-89	TRANSISTOR	DTC144ES		R123	1-249-421-11	CARBON	2.2K	5% 1/4W
Q526	8-729-900-65	TRANSISTOR	DTA144ES		R124	1-247-887-00	CARBON	220K	5% 1/4W
Q527	8-729-900-89	TRANSISTOR	DTC144ES		R125	1-249-421-11	CARBON	2.2K	5% 1/4W
Q541	8-729-900-89	TRANSISTOR	DTC144ES		R126	1-247-807-31	CARBON	100	5% 1/4W
Q542	8-729-620-05	TRANSISTOR	2SC2603-EF		R127	1-247-807-31	CARBON	100	5% 1/4W
Q701	8-729-620-05	TRANSISTOR	2SC2603-EF		R128	1-249-421-11	CARBON	2.2K	5% 1/4W
Q702	8-729-209-15	TRANSISTOR	2SD2012		R129	1-249-439-11	CARBON	68K	5% 1/4W
Q703	8-729-900-74	TRANSISTOR	DTC143TS		R131	1-249-437-11	CARBON	47K	5% 1/4W
Q704	8-729-900-74	TRANSISTOR	DTC143TS		R132	1-249-409-11	CARBON	220	5% 1/4W
Q705	8-729-141-83	TRANSISTOR	2SB1094-LK		R141	1-249-441-11	CARBON	100K	5% 1/4W
Q706	8-729-209-15	TRANSISTOR	2SD2012		R142	1-249-435-11	CARBON	33K	5% 1/4W
Q707	8-729-119-76	TRANSISTOR	2SA1175-HFE		R201	1-249-432-11	CARBON	18K	5% 1/4W
Q708	8-729-140-04	TRANSISTOR	2SB1116A-L		R202	1-249-421-11	CARBON	2.2K	5% 1/4W
Q801	8-729-900-80	TRANSISTOR	DTC114ES		R203	1-249-420-11	CARBON	1.8K	5% 1/4W
Q802	8-729-620-05	TRANSISTOR	2SC2603-EF		R204	1-249-441-11	CARBON	100K	5% 1/4W
Q803	8-729-900-89	TRANSISTOR	DTC144ES		R205	1-249-424-11	CARBON	3.9K	5% 1/4W
Q804	8-729-900-80	TRANSISTOR	DTC114ES		R209	1-249-429-11	CARBON	10K	5% 1/4W
Q805	8-729-801-93	TRANSISTOR	2SD1387		R210	1-249-429-11	CARBON	10K	5% 1/4W
Q806	8-729-801-93	TRANSISTOR	2SD1387		R211	1-249-435-11	CARBON	33K	5% 1/4W
Q807	8-729-900-89	TRANSISTOR	DTC144ES		R212	1-247-846-11	CARBON	4.3K	5% 1/4W
Q808	8-729-900-65	TRANSISTOR	DTA144ES		R213	1-247-887-00	CARBON	220K	5% 1/4W
Q809	8-729-119-76	TRANSISTOR	2SA1175-HFE		R214	1-249-429-11	CARBON	10K	5% 1/4W
Q810	8-729-900-80	TRANSISTOR	DTC114ES (WR565, WR665S)		R215	1-249-433-11	CARBON	22K	5% 1/4W
Q811	8-729-900-65	TRANSISTOR	DTA144ES (WA7ES, WR665S)		R217	1-249-437-11	CARBON	47K	5% 1/4W
Q812	8-729-900-80	TRANSISTOR	DTC114ES		R218	1-249-425-11	CARBON	4.7K	5% 1/4W
Q813	8-729-900-65	TRANSISTOR	DTA144ES (WR565, WR665S)		R219	1-249-429-11	CARBON	10K	5% 1/4W
Q920	8-729-119-76	TRANSISTOR	2SA1175-HFE		R221	1-249-434-11	CARBON	27K	5% 1/4W
	(CONNECTOR BOARD) (WR565, WR665S)				R222	1-249-417-11	CARBON	1K	5% 1/4W
	< RESISTOR >				R223	1-249-421-11	CARBON	2.2K	5% 1/4W
R101	1-249-432-11	CARBON	18K	5% 1/4W	R224	1-247-887-00	CARBON	220K	5% 1/4W
					R225	1-249-421-11	CARBON	2.2K	5% 1/4W
					R226	1-247-807-31	CARBON	100	5% 1/4W
					R227	1-247-807-31	CARBON	100	5% 1/4W

## SYSTEM CONTROL

## TRANSFORMER

## PANEL

## CONNECTOR

## POWER SWITCH

## PITCH CONTROL

## HEADPHONE

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R228	1-249-421-11	CARBON	2. 2K	5%	1/4W		R713	1-249-417-11	CARBON	1K	5%	1/4W	
R229	1-249-439-11	CARBON	68K	5%	1/4W		R714	1-249-422-11	CARBON	2. 7K	5%	1/4W	
R231	1-249-437-11	CARBON	47K	5%	1/4W		R715	1-249-431-11	CARBON	15K	5%	1/4W	
R232	1-249-409-11	CARBON	220	5%	1/4W		R716	1-249-430-11	CARBON	12K	5%	1/4W	
R241	1-249-441-11	CARBON	100K	5%	1/4W		R717	1-249-437-11	CARBON	47K	5%	1/4W	
R242	1-249-435-11	CARBON	33K	5%	1/4W		△R718	1-219-137-11	FUSIBLE	0. 33	10%	1/4W F	
R501	1-215-452-00	METAL	20K	1%	1/4W		R719	1-249-414-11	CARBON	560	5%	1/4W	
R502	1-249-417-11	CARBON	1K	5%	1/4W		△R720	1-219-139-11	FUSIBLE	0. 68	10%	1/4W F	
R503	1-249-435-11	CARBON	33K	5%	1/4W		△R721	1-219-139-11	FUSIBLE	0. 68	10%	1/4W F	
R505	1-249-435-11	CARBON	33K	5%	1/4W		R801	1-249-417-11	CARBON	1K	5%	1/4W	
R506	1-249-433-11	CARBON	22K	5%	1/4W		R802	1-249-441-11	CARBON	100K	5%	1/4W	
R508	1-249-433-11	CARBON	22K	5%	1/4W		R803	1-249-435-11	CARBON	33K	5%	1/4W	
R509	1-249-435-11	CARBON	33K	5%	1/4W		R804	1-249-433-11	CARBON	22K	5%	1/4W	
R521	1-215-455-00	METAL	27K	1%	1/4W		R805	1-249-433-11	CARBON	22K	5%	1/4W	
R522	1-249-429-11	CARBON	10K	5%	1/4W		R806	1-249-429-11	CARBON	10K	5%	1/4W	
R523	1-249-429-11	CARBON	10K	5%	1/4W		R807	1-249-429-11	CARBON	10K	5%	1/4W	
R524	1-249-417-11	CARBON	1K	5%	1/4W		R808	1-249-433-11	CARBON	22K	5%	1/4W	
R525	1-247-872-11	CARBON	51K	5%	1/4W		R809	1-249-430-11	CARBON	12K	5%	1/4W	
R526	1-249-417-11	CARBON	1K	5%	1/4W		R810	1-249-433-11	CARBON	22K	5%	1/4W	
R527	1-249-413-11	CARBON	470	5%	1/4W		R811	1-249-433-11	CARBON	22K	5%	1/4W	
△R528	1-212-863-00	FUSIBLE	18	5%	1/4W F		R812	1-249-433-11	CARBON	22K	5%	1/4W	
R529	1-249-437-11	CARBON	47K	5%	1/4W		R813	1-247-807-31	CARBON	100	5%	1/4W	
R530	1-249-429-11	CARBON	10K	5%	1/4W		R814	1-249-430-11	CARBON	12K	5%	1/4W	
R531	1-249-437-11	CARBON	47K	5%	1/4W		R815	1-249-433-11	CARBON	22K	5%	1/4W	
R532	1-249-417-11	CARBON	1K	5%	1/4W		R816	1-249-433-11	CARBON	22K	5%	1/4W	
R533	1-249-432-11	CARBON	18K	5%	1/4W		R817	1-249-433-11	CARBON	22K	5%	1/4W	
R534	1-249-430-11	CARBON	12K	5%	1/4W		R818	1-247-807-31	CARBON	100	5%	1/4W	
R535	1-249-437-11	CARBON	47K	5%	1/4W		R819	1-249-434-11	CARBON	27K	5%	1/4W	
R536	1-249-437-11	CARBON	47K	5%	1/4W		R820	1-249-434-11	CARBON	27K	5%	1/4W	
R538	1-249-435-11	CARBON	33K	5%	1/4W		R821	1-249-434-11	CARBON	27K	5%	1/4W	
R541	1-249-426-11	CARBON	5. 6K	5%	1/4W		R822	1-249-434-11	CARBON	27K	5%	1/4W	
R542	1-249-433-11	CARBON	22K	5%	1/4W		R823	1-249-429-11	CARBON	10K	5%	1/4W	
R543	1-249-436-11	CARBON	39K	5%	1/4W		R824	1-249-429-11	CARBON	10K	5%	1/4W	
R544	1-249-441-11	CARBON	100K	5%	1/4W		R825	1-249-429-11	CARBON	10K	5%	1/4W	
R545	1-249-437-11	CARBON	47K	5%	1/4W		R826	1-249-429-11	CARBON	10K	5%	1/4W	
R546	1-249-441-11	CARBON	100K	5%	1/4W		R827	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R547	1-247-846-11	CARBON	4. 3K	5%	1/4W		R828	1-247-874-11	CARBON	62K	5%	1/4W	
R701	1-249-421-11	CARBON	2. 2K	5%	1/4W		R829	1-247-866-11	CARBON	30K	5%	1/4W	
R702	1-249-422-11	CARBON	2. 7K	5%	1/4W		R830	1-249-431-11	CARBON	15K	5%	1/4W	
R703	1-249-429-11	CARBON	10K	5%	1/4W		R831	1-247-852-11	CARBON	7. 5K	5%	1/4W	
R704	1-249-422-11	CARBON	2. 7K	5%	1/4W		R835	1-249-433-11	CARBON	22K	5%	1/4W	
R705	1-249-425-11	CARBON	4. 7K	5%	1/4W		R836	1-247-852-11	CARBON	7. 5K	5%	1/4W	
R706	1-249-427-11	CARBON	6. 8K	5%	1/4W		R841	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R707	1-249-419-11	CARBON	1. 5K	5%	1/4W		R842	1-249-429-11	CARBON	10K	5%	1/4W	
R708	1-249-429-11	CARBON	10K	5%	1/4W		R843	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R709	1-249-419-11	CARBON	1. 5K	5%	1/4W		R844	1-249-429-11	CARBON	10K	5%	1/4W	
R710	1-249-425-11	CARBON	4. 7K	5%	1/4W		R845	1-249-422-11	CARBON	2. 7K	5%	1/4W	
R711	1-249-427-11	CARBON	6. 8K	5%	1/4W		R846	1-249-422-11	CARBON	2. 7K	5%	1/4W	
R712	1-249-427-11	CARBON	6. 8K	5%	1/4W		R847	1-249-422-11	CARBON	2. 7K	5%	1/4W	

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Ne les remplacer que par une pièce portant le numéro spécifié.

## SYSTEM CONTROL

## TRANSFORMER

## PANEL

## CONNECTOR

## POWER SWITCH

## PITCH CONTROL

## HEADPHONE

**SYSTEM CONTROL****TRANSFORMER****PANEL****CONNECTOR****POWER SWITCH****PITCH CONTROL****HEADPHONE**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
S911	1-554-303-21	SWITCH, TACTILE ( REC MUTE )	(PANEL BOARD)	16	1-765-216-11	WIRE (FLAT TYPE) (11 CORE)	
S912	1-554-303-21	SWITCH, TACTILE (AMS <>)	(PANEL BOARD)	67	1-765-214-11	WIRE (FLAT TYPE) (7 CORE)	
S913	1-554-303-21	SWITCH, TACTILE (AMS >>)	(PANEL BOARD)	71	1-765-217-11	WIRE (FLAT TYPE) (37 CORE)	
S914	1-554-303-21	SWITCH, TACTILE (DISPLAY)	(PANEL BOARD)	72	1-765-215-11	WIRE (FLAT TYPE) (7 CORE)	
S915	1-554-303-21	SWITCH, TACTILE (RMS/START)	(PANEL BOARD)	74	1-765-213-11	WIRE (FLAT TYPE) (7 CORE)	
S916	1-554-303-21	SWITCH, TACTILE (SET)	(PANEL BOARD)	121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
S917	1-554-303-21	SWITCH, TACTILE (CHECK)	(PANEL BOARD)	HP101	A-2003-757-A	BASE ASSY, HEAD (PLAY BACK) (DECK A)	
S918	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)	(PANEL BOARD) (WR565)	HRPE101A-2003-930-A	BASE ASSY, HEAD (RECORD, PLAYBACK, ERASE)	(DECK B)	
S918	1-554-303-21	SWITCH, TACTILE (RESET)	(PANEL BOARD) (WA7ES, WR665S)	△S701	1-692-155-11	SELECTOR, POWER VOLTAGE (E)	
S919	1-554-303-21	SWITCH, TACTILE (MEMORY)	(PANEL BOARD) (WA7ES, WR665S)	△T701	1-427-782-11	TRANSFORMER, POWER (US, CND)	
S920	1-554-303-21	SWITCH, TACTILE (HIGH)	(PANEL BOARD)	△T701	1-427-783-11	TRANSFORMER, POWER (AEP, UK, G, AUS, CH)	
S921	1-554-303-21	SWITCH, TACTILE (NORMAL)	(PANEL BOARD)	△T701	1-427-784-11	TRANSFORMER, POWER (E)	
S922	1-554-303-21	SWITCH, TACTILE (RESET)	(PANEL BOARD) (WA7ES, WR665S)	*****			
S923	1-692-126-11	SWITCH, SLIDE (DOLBY NR)	(PANEL BOARD) (WA7ES, WR665S)				
S923	1-692-665-11	SWITCH, SLIDE (DOLBY NR)	(PANEL BOARD) (WR565)				
S924	1-692-126-11	SWITCH, SLIDE (DOLBY NR)	(PANEL BOARD)				
S925	1-692-126-11	SWITCH, SLIDE (DIR MODE)	(PANEL BOARD)				
S926	1-554-303-21	SWITCH, TACTILE (AUTO CAL)	(PANEL BOARD)				
S927	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)	(PANEL BOARD) (WR565)				
S927	1-554-303-21	SWITCH, TACTILE (MEMORY)	(PANEL BOARD) (WA7ES, WR665S)				
		< TEST PIN >					
* TP801	1-560-060-00	PIN, CONNECTOR 2P					
		< FLUORESCENT INDICATOR TUBE >					
VFD901	1-517-263-11	INDICATOR TUBE, FLUORESCENT	(PANEL BOARD)				
		< CRYSTAL >					
X801	1-579-175-11	VIBRATOR, CERAMIC (10MHz)					
		*****					
		MISCELLANEOUS					
		*****					
△5	1-569-007-11	ADAPTER, CONVERSION 2P (E)					
△6	1-551-188-XX	CORD, POWER (E)					
△6	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, CND)					
△6	1-575-651-21	CORD, POWER (AEP, G, CH)					
△6	1-696-586-11	CORD, POWER (UK)					
△6	1-696-845-11	CORD, POWER (AUS)					

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
***** <b>HARDWARE LIST</b> *****			
#1	7-685-871-01	SCREW +BVTT 3×6 (S)	
#2	7-685-646-79	SCREW +BVTP 3×8 TYPE2 IT-3	
#3	7-682-547-09	SCREW +BVTT 3×6 (S)	
#4	7-682-548-04	SCREW +BVTT 3×8 (S)	
#5	7-685-134-19	SCREW (+ PTPWH) (2.6×8)	
#6	7-621-773-95	SCREW +BVTT 2.6×6 (S)	
#7	7-627-556-08	SCREW +P 2.6×2.8	
#8	7-621-775-00	SCREW +B 2.6×3	